THE BRICKBVILDER

VOLUME XXIV DECEMBER, 1915 NUMBER 12

The School Building as a Social Center.

PART I.

By DWIGHT H. PERKINS.

A LARGE number of school buildings have been erected which have been planned for adaptation as social or neighborhood centers, and the number is increasing in rapid ratio each year.

The desire to establish social centers as such is only a secondary cause, however, for the increase in the number of such schools. The primary causes are the expanding demands of education, which are multiplying the functions and increasing the requirements for something more than mere class rooms in our public schools.

A modern school problem, properly conceived and fully stated, requires the architect to plan a structure which is in itself a neighborhood or social center for daytime use by children. At the same time he automatically plans a social center building for adults to be used outside of school hours. There is no essential difference between the two; the only difference remaining relates to the size of furniture for children and for adults, and this is becoming gradually simpler as the use of fixed seats and desks is discontinued.

The problem is, therefore, when schools are properly planned as schools, principally one of administration. First throw away the key to the front door, engage extra engineers and directors, arrange and announce a program, and the result is sure to be a neighborhood center in full action.

To establish social centers a community must first engage the *man* or *woman* who shall be leader; second, make a program vitally related to local problems, and third, erect a modern school or revise the old one to provide physical facilities.

The school, by its relation to all of the people, regardless of divisions of politics, religion, or wealth, is the only institution which can be made to serve as a neighborhood or social center. It alone is possessed by all the people. It fills a need not met by any other type of building. It alone can justify the expenditure of public money for its construction, and it alone can give to the people a social center without expense, when it is properly planned as a modern school.

At the same time it gives to the architect the greatest opportunity for display of his talents of any type of modern building for which there is great and increasing demand.

It therefore follows that if we would study community centers (we may as well drop both adjectives, "social" and "neighborhood," and substitute the one inclusive word "community"), we will have to consider the latest development of the school and state, its requirements, its functions, and facilities.

We will pass by the one-room district school and give our attention first to a community where there are five hundred children under high school age. The modern educator asks for these: twenty class rooms, because he will object to more than twenty-five pupils for each teacher; he asks for a shop for manual training, a room for cooking and sewing, a central auditorium large enough to seat the whole school and having entrances and exits of its own; a gymnasium, a library, book and reading room; a sitting and rest room, with kitchenette for the teachers, which shall be large enough for neighborhood committees and mothers' conferences; a polling place with booths for the voters, administrative offices, emergency room, toilets, storerooms, bicycle space, heating and plumbing facilities, etc.; in addition, a playground of at least three acres — more, if possible.

What more could the most enthusiastic community center secretary demand?

The same modern educator, if desiring a high school, would add to the above rooms and facilities for scientific study not pursued in elementary schools, shops for metal work required in a course of four years of manual training, a large lunch room, a separate gymnasium and field for girls, a natatorium, a museum of art and natural history, and some day, not far off, a home for the principal.

The playground for such a high school should contain not less than six acres.

These statements of requirements are definitions of the modern public school. Such schools have been developing gradually for a number of years. One may trace their appearance by reference to the departure from square three-story, box-like buildings of the eighties, which consisted merely of a number of ordinary class rooms and stairways.

The response to the desire for assembly space was the first step in the design of the modern school. This first step consisted of some form of portable partition between two class rooms, then between two class rooms and the adjacent corridor, so that rooms or rooms and corridors could be thrown together for assembly use.

The separate hall with a small stage followed. All of these were in the third or top story, frequently run up into the roof with high ceilings and of increasing attractiveness.

The greater demands of the public and a few fires caused a rapid change in school building, and between 1900 and 1905 first-story assembly halls became general. Seating capacity and stage dimensions have steadily increased; rear stage access is being provided, and in many cases the whole assembly portion is being put on the ground

level at one end of the building or in a separate wing; so that at the present time we find the type generally indorsed and frequently built, which provides perfect accommodations for the school and all that a neighborhood needs for community center auditorium purposes.

But community centers do not thrive on auditoriums alone — they need gymnasiums as well; and a similar survey to the above discloses the original school gymnasium as a corridor merely. Then we notice it widening, then occupying basement space under the assembly hall, and again exchanging places with the assembly hall, going in above it when the hall is located on the first story level. Sometimes the gymnasium and assembly hall are on the same level, separated by portable partitions, so that either can be expanded temporarily by spreading into the adjacent space. And better still, we are now beginning to see separate ground level gymnasiums with special entrances which make neighborhood use easy.

What is true about assembly halls and gymnasiums is also true in a lesser degree about space and equipment for manual training and domestic science. These rooms may be traced from incidental beginnings and basement unused spaces to quarters as well built, finished, lighted, ventilated, and equipped as any other parts of the school, and they also are coming to be used by the older members of the community outside of school hours.

Night schools for all the daytime subjects, as well as evening clubs for the study of neighborhood problems and the elevation of citizenship, are coming more and more to use the class rooms and facilities provided for ordinary school purposes; and the kindergarten, formerly an ordinary class room, or worse, has become a department by itself, with separate entrances, toilets, wardrobes, workroom, play space, and plenty of morning sunlight. In the evening it is a perfect club room for a hundred neighbors.

The development of the public library system in cities has gone on until now one expects to see a library station, with distributing center and reading room, in each school, and in many modern buildings he is not disappointed.

No modern school is a school if it does not have a playground, and communities are becoming intelligent enough to see that school boards and park boards are overlapping — that neither the school building and playground nor their administration should be separate. They are so closely interwoven that their successful conduct depends upon one board with a coördinated plan. The same may be said of schools and libraries, and schools and polling places, now that saloons are becoming less popular centers of citizenship control. In fact, schools, high schools, parks, playgrounds, gymnasiums, kindergartens, libraries, clubs, forums, polling places, natatoriums, bathing facilities, vocational shops, provision for music, for choruses, festivals, and pageantry — all these are a part of one educational system. There is no antagonism between them; instead, each division helps the other to attain its best results, and the architect who builds his schools upon that general proposition will insure a much longer period of serviceableness of his buildings for his clients, the parents and children, than would be the case if he narrowed down his design to provide for a few functions only.

We will be able in the next article in this series to show by illustration a number of school buildings in use, or about to be, and to mention those features which relate to the subject of this article. We shall endeavor to show wherein they are available for community use, and in a few instances we shall be able to describe not only the neighborhood use which is possible, but also the service of that kind which they are actually giving in certain localities.

A very important contribution to the development of the modern school has come from the recreation buildings and community centers erected in numerous small parks. There is no feature in such buildings which should not be incorporated in the school plant, or as is the case in Gary, Ind., the schools should be built in the parks and the management be all under one board for one community purpose.

Assembly Hall, showing Kindergarten on Upper Level, in Lincoln Wood School, Evanston, Ill.

Perkins Fellows & Hamilton, Architects

The Use of Native Woods for Interior Finish.

PART IV. (Concluding Paper.)

By C. MATLACK PRICE.

OAK is a historic wood both in this country and throughout most of continental Europe — a wood of sterling qualities and many uses. It is said, indeed, that while oak is not so suitable for certain uses as certain other woods, it is the best suited to the greatest number of uses. The term "solid oak" strikes a note in the mind as definite as "solid silver" — inquiry or speculation as to its properties proceeds no further.

Stairway of Oak in House at Haverford, Pa.
Wilson Eyre & McIlvaine, Architects

In classing the oaks it would serve no purpose, and lead only to confusion, if an enumeration were given of the twenty-seven species of "white oaks" and the twenty-five species of "black oaks." The designation "white" and "black" is, moreover, only a botanical distinction, and one rarely, if ever, taken account of by lumbermen. Of the "white oak" division, the tree known as white oak heads the list, while in the "black oaks" division the tree called "red oak" is considered the leader.

Broadly speaking, the properties of all the oaks are similar. Some may be tougher than others, some may be more resilient, some heavier, some may better withstand weather than others, some may be peculiarly adapted to staining or fuming, but good qualities pervade all.

We all know oak as a strong, tough wood, remarkable for its suitability for exposed work and for its combined structural and decorative values, as well as its adaptability to carving.

It was said above that oak is a "historic" wood — and it was intended to imply the association which is one of our legacies from the Old World. The term — "a room of oak," "oak wainscoting," or "oak paneling" — calls to mind at once the time mellowed interiors of old English mansions or the smoke blackened ceiling rafters of some venerable tavern or coffee house. Innumerable associations that are a deep rooted part of the race to which we belong cling around the very mention of "old oak."

The associations, which might almost be called "literary," are, in a way, peculiar to oak, and are a much greater factor in popularizing its use for interior work than might be supposed. But since these traditions are common property, it is not necessary to do more than remind the reader of their potency, which years have not lessened.

The greatest concern of the present generation should be the conservation of white oak timber and the planting of stands for future generations, because the best lumber (especially for quarter-sawing) comes from oak trees of one hundred and fifty years or more of growth. The impatience of the present day does not wait one hundred and fifty years for timber to reach its

Straight Sawed Oak
Illustration ¼ Width of Specimen

Oak Hall in House at Haverford, Pa.
Wilson Eyre & McIlvaine, Architects

Quarter-sawed Oak
Illustration ¼ Width of Specimen

growth, and although this country has had vast stands of oak over considerable areas, it is easily possible to foresee a time when large lumber operations in oak will be a thing of the past.

The heartwood of oak is naturally light brown in color, with only a comparatively thin ring of sapwood. Its most striking physical characteristic is its pronounced formation of medullary rays, and the use of these for "figure," as produced by quarter-sawing, is equaled by no other wood in the world. We are all familiar with the appearance of quarter-sawed oak, notably in office furniture.

The furniture makers use enormous quantities of the wood in "period" furniture, as well as in "mission," "craft," and "cottage" furniture, and oak is largely used as well for a veneer wood on "built-up" panels. Sentimentally, there are few people who would not prefer to know that the paneling of their room is "solid oak," even though practically a "built-up" panel is more likely to withstand warping and shrinking.

The adaptability of oak to carving was mentioned, and this is one of the most conspicuous properties of the wood. Not only massive and vigorous designs, such as grotesques, corbels, and brackets (indoors or out), may be hewn from oak, but carving of remarkably fine scale and detail may also be executed. One of the most splendid examples of carved oak in this country is the ceiling of the Exhibition Room, on the main floor, and between the two courts of the New York Public Library.

Private Office of Mellor & Meigs, Architects, Philadelphia, Pa.
Panels are of English oak ; remainder of woodwork is American oak

Speaking again of the different varieties of oaks, one difficulty in this connection arises from the existence, in some cases, of several popular names for the same tree, and in general from the failure of the millmen to make any distinction, even if the logs have come in from the lumberman separately and with different designations.

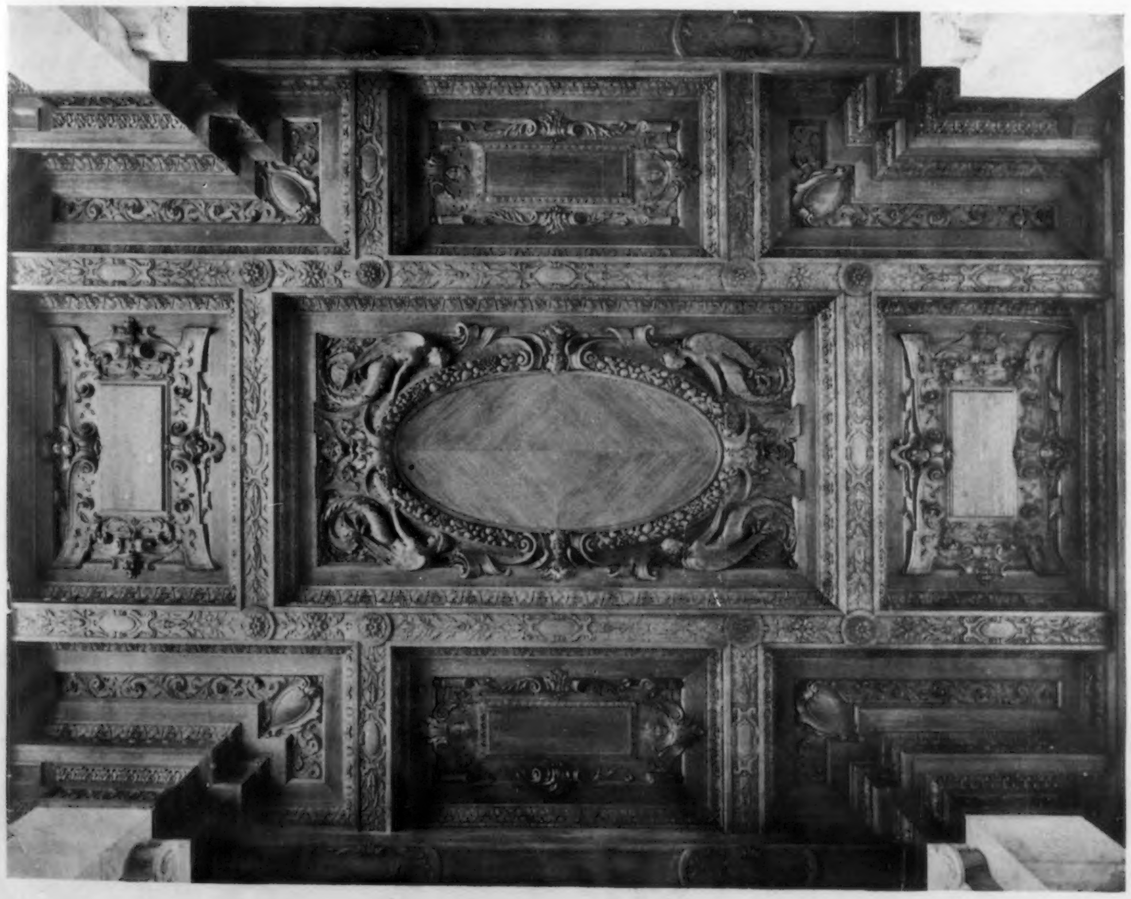
Quartered Oak Paneling in Dining Room, President's House, Columbia University, New York
McKim, Mead & White, Architects

Furthermore, the minor differences in physical properties do not greatly affect the uniform suitability of the wood for use as interior finish, though if certain specific effects are desired it is always well to buy the wood from a sample than to buy it merely by name.

Oak is a porous wood, with long pores running the length of the log. These pores, when the wood is quarter-sawed, naturally present open ends, while straight-sawing also lays open many pores longitudinally. These pores afford opportunity to force stains well into the wood and make it peculiarly susceptible, as well, to any process of fuming.

ELM is found in this country in six species, or varieties, of which white elm is the best known to the lumber trade. All the elms are of nearly similar properties, and white elm, slippery elm, and cork elm are commonly classed together as "northern elm." In early lumbering days elm was cut considerably in Michigan, while throughout New England, as well as the Middle Atlantic states, it has long been highly esteemed as a shade tree.

In its structure elm is strong and tough, and while it does not possess a great deal of character, it is possible to bring it to a fine appearance with stain and polish. Quarter-sawing of elm brings out no figures, as the medullary rays are not prominent.



OAK CEILING OF EXHIBITION ROOM CARVED FROM THE SOLID

CARVED OAK SCREEN AND DOORWAY IN READING ROOM

CARVED OAK DETAILS IN THE NEW YORK PUBLIC LIBRARY, NEW YORK, N. Y.

CARRÈRE & HASTINGS, ARCHITECTS

Although not so widely heard of as many other native woods for interior finish, it is stated in Gibson's "American Forest Trees" that the state of Michigan alone sends 50,000,000 cubic feet of elm to its factories annually, and of this total, 2,000,000 cubic feet go to the furniture factories. Furniture making, whether one considers the exposed portions or the framing, is a good criterion for the adaptability of a wood for interior work, because the same properties which are essential in one use, such as the thoroughness with which it may be seasoned, its appearance, and its manner of taking stains, are equally essential in the other.

Carved Oak Reredos with Quarter-sawed Panels

THE PINES are divided, in commercial usage as well as by foresters, into two groups, — the soft pines and the hard pines. In the first division there are listed twelve varieties, and in the second, twenty-two, and in both it is important to always bear in mind that no other wood varies so in its different "grades," and that great care must be taken first to specify exactly the grade desired, and then to see that all the stock conforms to the grade sample selected and approved. "Y. P.," for instance, meaning yellow pine, appears in many specifications; but there are widely different grades of this lumber, as with all the other pines.

While the properties of all pines, with regard to interior finish, are broadly similar, there are certain differences and peculiarities worthy of note not only as between the "hards" and "softs," but in different varieties in each division. The designation "soft pine" originated as a means of distinction from the heavier "pitch pines." Occasionally one hears the terms "pumpkin pine" and "cork pine" — these, however, only in speaking of the wood itself, and with reference to the even, homogeneous grain of perfect lumber from old and well-grown white pine trunks.

The usual "white pine" of commerce is one of the softest and most easily worked of all woods used in building. Considering its lightness, it compares reasonably well for strength with other woods, though it is valuable chiefly for characteristics not dependent upon strength. Most pines are trees of rapid growth, so that the annual rings are clearly defined in cross-section, being more pronounced in some species than in others. Medullary rays cannot be considered a conspicuous feature.

White pine has always been popular with the carpenter because it works with great ease, does not split when nailed, and holds its form better than many more expensive woods after it has been seasoned.

This property makes soft pine a much used wood for sash and doors, and for the cores of "built-up" veneered panels.

In its natural appearance soft pine, in the varieties most frequently met with, presents a considerable variety of "figure," often not at all unlike cypress. The body color of the wood, unstained, is cream; the "figure" formed by the difference in color of the two growths is a reddish brown or orange color, and is displayed in quarter-sawed or "rift-sawed" stock.

Being almost entirely free from resin, this wood is an admirable base for any kind of enamel or paint, or, if it is desired to bring out the natural interest and beauty, for the application of any kind of transparent stains.

Oak Paneling in Den of House at Chestnut Hill, Pa.
Mellor & Meigs, Architects

Ammonia Fumed Oak Finish in Goshen Inn, Goshen, N. Y.
Walker & Gillette, Architects

An important white pine is the western white pine, which is now shipped in considerable quantities as far east as Chicago to be manufactured into doors and trim. Another western soft pine is the "sugar pine," which is said to be more immune than the white pine of the East from tendency to shrink, swell, or warp. The appreciation of the former large stock of high-grade white pine has created an eastern market for the western pines, though only the higher grades are profitable to ship, which leaves the lower grades, in both the East and the West, supreme in their own markets.

The hard pines, though harder than the soft pines, are, in turn, considerably softer than most of the "hardwoods" used in interior finish. "Shortleaf" pine, for instance, though actually listed as a "hard" pine, is nearly always alluded to as "soft," to distinguish it from still harder pines in the "hard" group. The "shortleaf" is an important wood, of numerous uses which follow the various grades in which the lumber is marketed — from stock for such rough work as plaster-lath and packing-boxes to stock for use in the manufacture of furniture and interior trim. It is known, also, and perhaps more widely, as "yellow," or "southern yellow pine."

Living Room in House of James Hopkins, Esq., Brookline, Mass.
Kilham & Hopkins, Architects
Walls of wide North Carolina pine sheathing

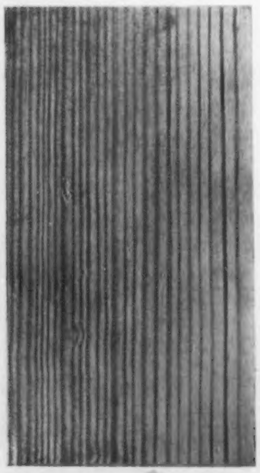
In 6-inch widths it is used for under-flooring, with 2¼-inch tongued-and-grooved stock (of better grade) for upper flooring. For single-flooring a good grade of the same width, tongued-and-grooved, but heavier, is often used. "Shortleaf" pine is an abundant wood in this country, widely available and widely distributed, which makes it a distinctly inexpensive wood. It is not a cheap wood in the sense of being inferior in its own way, nor is it a wood (except in its lower grades) for cheap work. While it does not cost as much as some lumber used for interior trim, it compares very favorably in appearance and service with many more expensive woods. Being softer than the variety known as "longleaf" pine, "shortleaf" is preferred by the manufacturers of sash and doors because it is far easier to work. It is often preferred to the "longleaf," also for interior trim, though the figures are quite similar. The wide annual rings in the heartwood when quarter-sawed display effective coloring and figure, which may be further enhanced by staining.

Very similar to the "shortleaf" pine is the "loblolly," locally known by several other names — a yellow pine and similar as well to the variety known as "Cuban" pine. There is, in fact, a great similarity in the four most prominent of the southern pines,— the shortleaf, longleaf, loblolly, and Cuban,— and it is said to be very difficult to distinguish one from the other upon mere superficial inspection of the wood.

Summarizing the properties and uses of the "shortleaf" pine, a concise and authoritative summary appears in one of the reports of the United States Forest Service: "It is the opinion of those who have studied the shortleaf pine's habit of growth and the extent of its natural

Straight Grain of Hard Pine

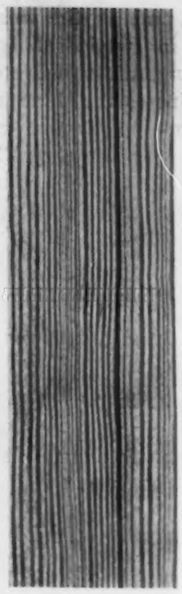
Committee Room, Lumbermen's Building, Panama-Pacific International Exposition, San Francisco, Cal.
Bernard R. Maybeck, Architect
The walls are of California white pine in wide panels of veneer and matched stock. The furniture is of California sugar pine



Edge Grain of Hard Pine


Straight Grain, Soft Pine


Door and Trim of Curly Pine


Edge Grain, Soft Pine

range that it promises to continue as one of the important timber trees of the South. . . .

"Furniture makers, who use yellow pine in considerable amounts, find shortleaf an admirable wood. It is worked into frames, goes into the interior of couches, tables, stands, and desks, and in the cheaper grades of similar articles may appear as the outside, visible part. The grain is handsome and shows well in natural finish or when stained.

"Inside and outside trim for houses is manufactured from shortleaf pine. It is widely used for flooring and is recommended both by appearance and because of its wearing qualities.

"It responds readily to oils, wax, and other floor finishes and dressings.

"It answers equally well as wainscoting and ceiling, for chairboards, baseboards, brackets, mouldings, cornices, roseblocks, ornaments, carved work, spindles, balusters, railings, stairs, and panels. Window frames and frames for doors, and the doors themselves, and sash are largely manufactured from this wood."

The "longleaf" pine is very strong, as well as being the hardest of the pines, is tough and compact and resinous, though the resin ducts are few. The color is a light orange, sometimes reddish, with almost white sapwood.

The figures in this variety of pine, as in the others, do not result from medullary rays, which though numerous are inconspicuous, but from the marked difference in color between the spring and summer growths. The dark colored summer wood, which gives "longleaf" pine its strength, predominates in each annual ring.

Much of the value of this wood for interior finish comes from its striking figure, especially important in the manufacture of doors, and great variety and interest may be displayed by selecting the stock with care and with consideration for its figure possibility.

Norway pine is still considerably used for interior finish, though we are apt to think of it more to-day as an ornamental tree — more in the province of the landscape architect than the architect.

Pitch pine is an inclusive name applied in different localities to different varieties of pine, though usually considered as including all those of a hard, resinous nature. The quantity of resin in pitch pine naturally renders it unsuitable for many kinds of work, and the variation in hardness between the summerwood and springwood causes uneven wear, if used in a floor, as well as general difficulty of working.


Straight Grain of Elm

The soft white pine and the hard shortleaf, or yellow (also called "soft"), and the hard longleaf pines are the most suitable for use as interior finish and are the most generally used.

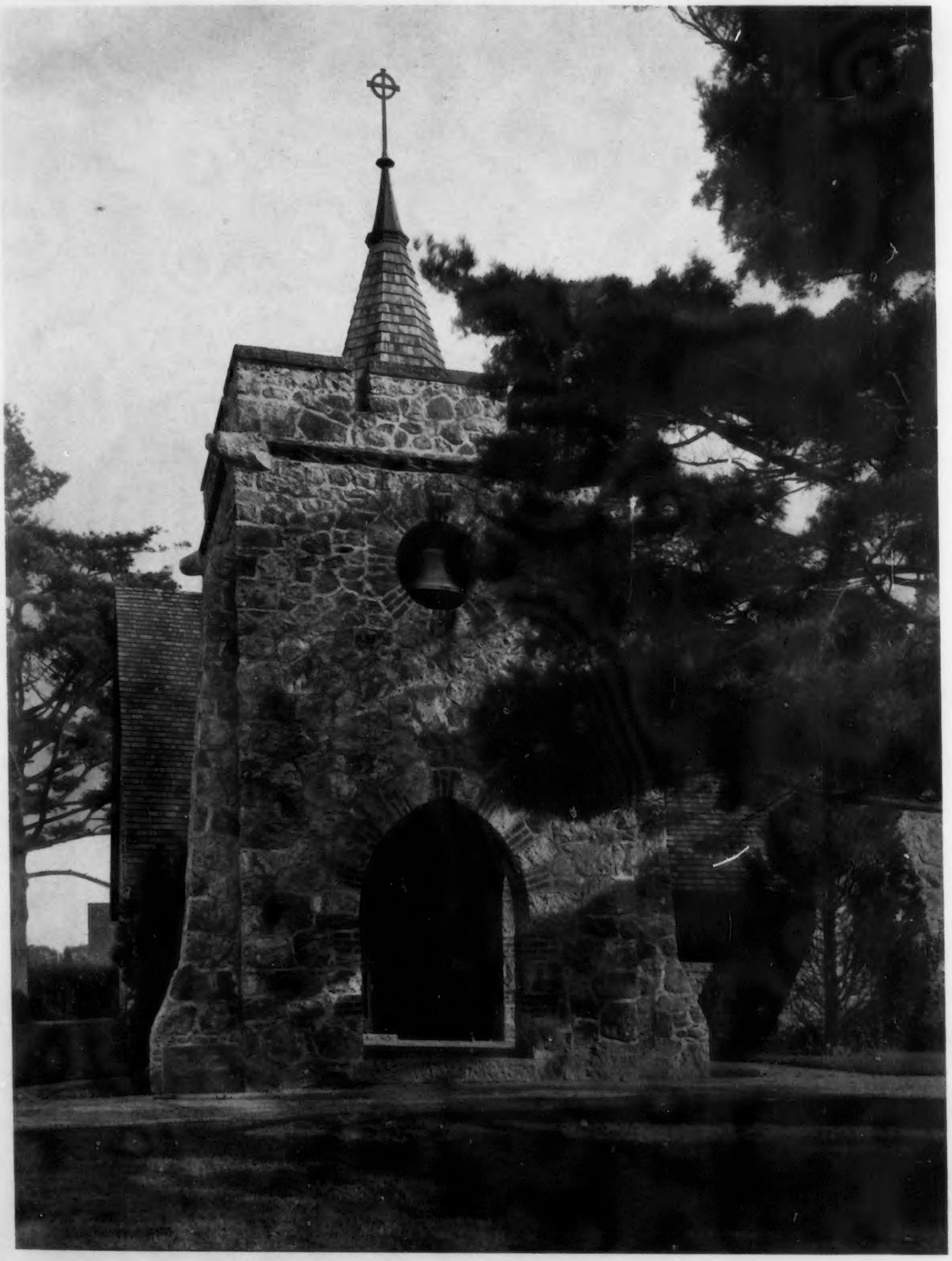
This and the previous papers cover, with necessary brevity, the woods native to America which are most adapted to use as interior finish. Much interesting data gave place to that which seemed most essential, and the intention throughout was to call to the attention of the practising architect the variety of native woods at his command — a variety in physical properties, in appearance, in adaptability, and in cost.


Club Room Finished in Gray Elm, Cadillac, Mich.
The paneled room shown through the wide opening is finished in western hemlock

It is true that among the foreign woods there are many interesting possibilities as well — at much higher cost — with such materials as mahogany, teak, French and Circassian walnut, and Hungarian ash; but the architect, however, will find profit in giving attention to the consideration of the great problem of conservation of some of the finest native woods which future generations will require.

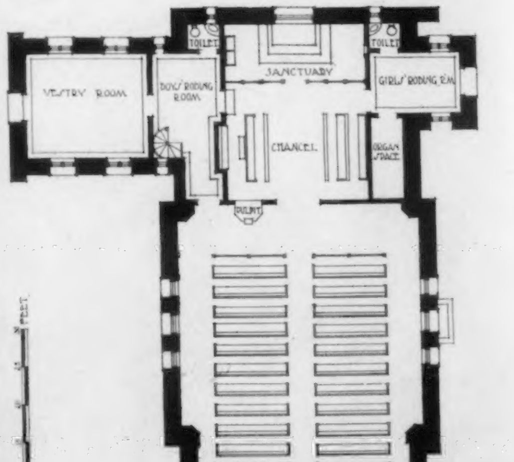
Episcopal Chapel at Westbury, Long Island.

JOHN RUSSELL POPE, ARCHITECT.



GENERAL VIEW OF EXTERIOR

ENTRANCE TO GIRLS' ROBING ROOM



GROUND FLOOR PLAN

EPISCOPAL CHAPEL AT WESTBURY, LONG ISLAND, N. Y.

JOHN RUSSELL POPE, ARCHITECT

EXTERIOR VIEW OF PARISH HOUSE

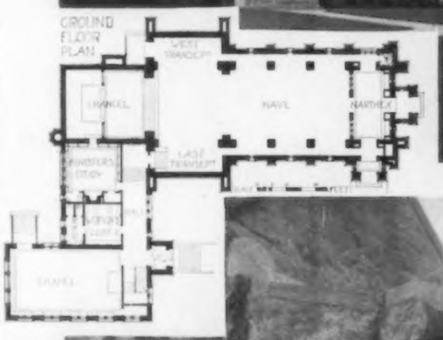
INTERIOR VIEW OF CHAPEL, LOOKING TOWARD CHANCEL

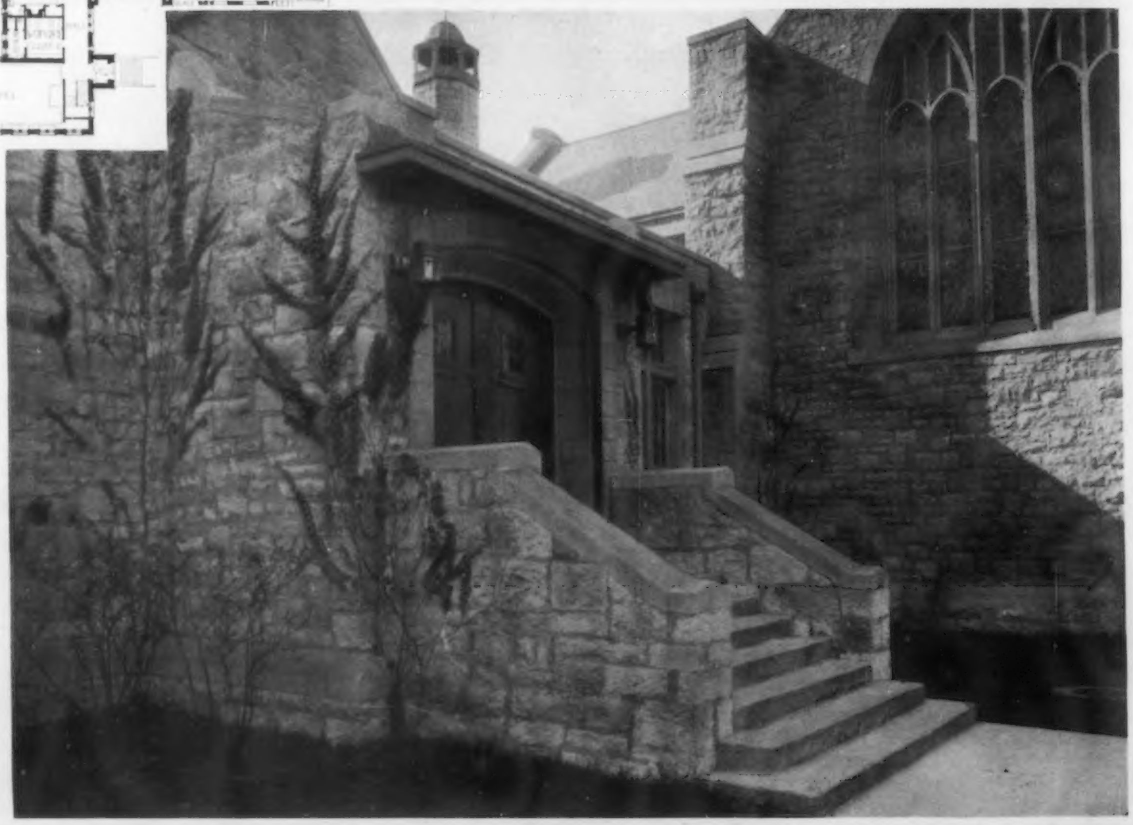
EPISCOPAL CHAPEL AND PARISH HOUSE AT WESTBURY, LONG ISLAND, N. Y.

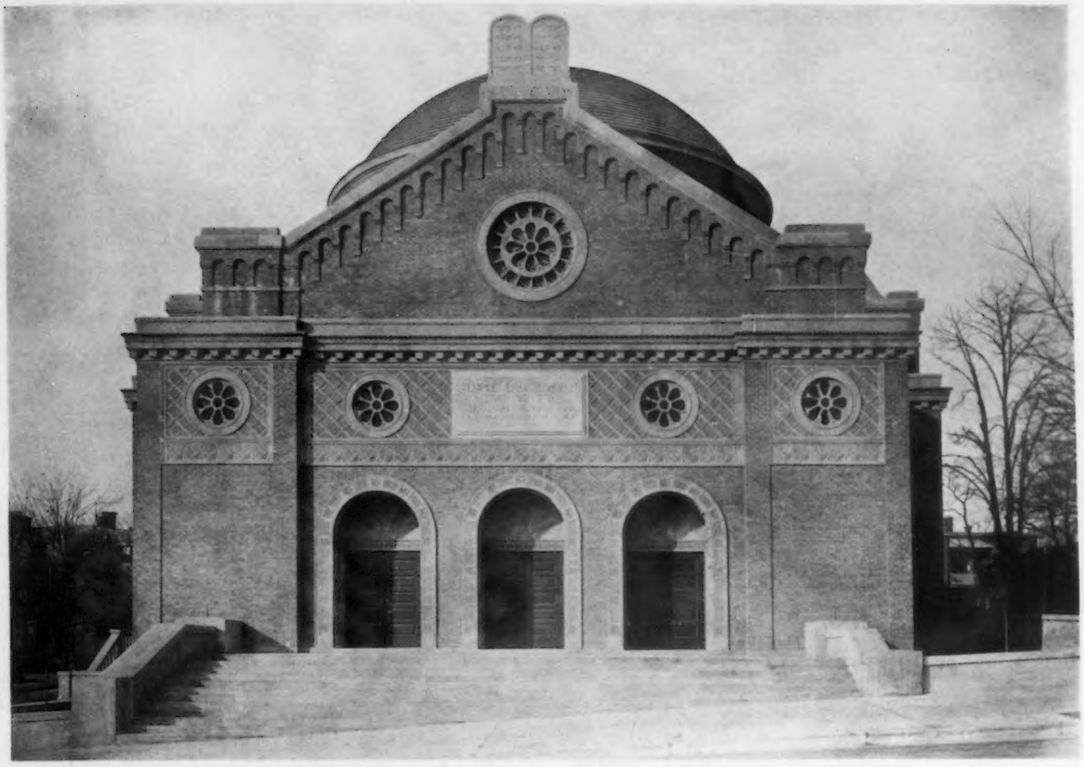
JOHN RUSSELL POPE, ARCHITECT

Plymouth Congregational Church, Chicago.

RIDDLE & RIDDLE, ARCHITECTS.







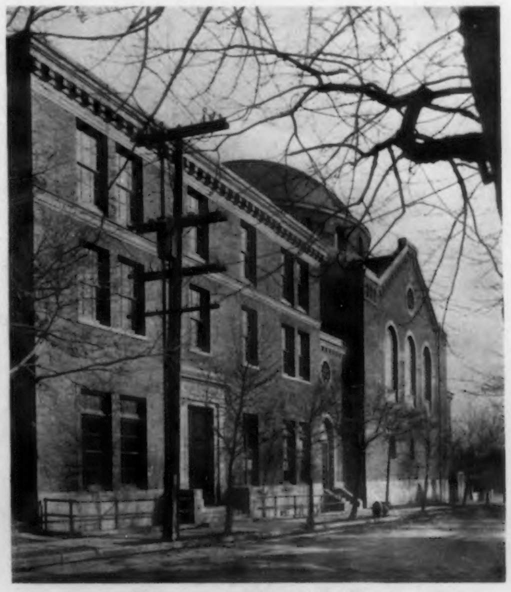
B'Nai Jeshurun Temple, Newark, N. J.

ALBERT S. GOTTLIEB, ARCHITECT.

THE B'Nai Jeshurun Temple is placed on a plot approximately 100 by 225 feet, the narrow frontage being on High street and the long one on Waverly avenue, with an alley at the rear leading to Quitman street. The building sets back 25 feet on High street, but occupies the remainder of the plot. It faces east with the altar at the west end and the organ in a gallery at the east end.

The structure comprises the auditorium proper and the religious school building adjoining. The auditorium seats 1,600 people — 1,250 on the main floor and 350 in the galleries. The main entrance is from High street through three large doors leading to a main vestibule. Two smaller entrances are on Waverly avenue. There are six large openings for memorial windows, three on the Waverly avenue side and three on the opposite side of the auditorium. In the basement beneath the vestibule end are retiring rooms, lavatories, and coat rooms for men and women. Adjoining the altar are the trustee's room and a study for the rabbi.

To the west of the temple and connected with it is the religious school building on Waverly avenue of three stories and a basement. It contains twelve class rooms for thirty pupils each, teachers' room, exhibition room, library, ladies' meeting room, and an assembly hall seating 380 people, and equipped with a stage and two dressing rooms at one end. In the basement of the school building are the coat rooms and lavatories for boys and for girls, as well as a small kitchen and superintendent's office. The rear of the basement contains the heating and ventilating plant. The latter has been made a subject of special study. Fresh air is supplied to the temple auditorium through a series of ducts under the floor and withdrawn through a large duct around the base of the dome. The air passes over air washers before entering the building. All the air in the auditorium can be renewed four times in an hour. A vacuum cleaner is also installed.



View showing School Building

The base courses and steps on the exterior are of stone. The walls are faced with light brown brick of rough texture with terra cotta trimmings of

the same color. All copings are Indiana limestone, and the dome and sloping roofs are covered with gray-green terra cotta tiles, the whole making a restful color scheme.

The interior walls, arches, and dome of the temple are covered with acoustic tile. The architectural ornamentation is in terra cotta of a soft brown color, and all woodwork is of a similar tone to accord with the tone of the tile which is the dominating material. The ark on the altar is of Tavernelle marble, and a red Italian marble is used for the base around the auditorium. The floors of aisles and altar are of cork tile.

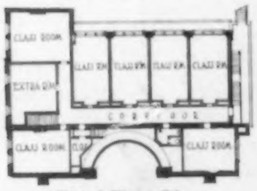
View showing Organ and Gallery at East End

Special consideration was given to the question of acoustics and the plans were submitted at an early stage to Professor Wallace C. Sabine, who has given the study of acoustics much attention and who advised the use of acoustic tile for the walls of the auditorium. The result is most satisfactory. A speaker using a normal tone of voice can be distinctly heard in any part of the auditorium and without any trace of an echo or reverberation.

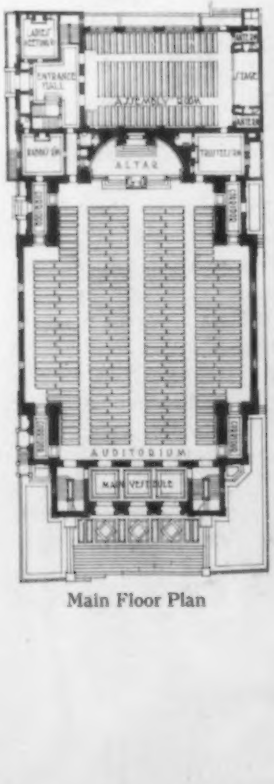
The lighting is by electricity with indirect or concealed fixtures. The main portion of the auditorium is illuminated by powerful lamps and reflectors in a six pointed, star shaped fixture suspended from the center of the dome.

The entire building is fireproof; furthermore, each floor of the school building is supplied with a standpipe and fire hose. It is said that the insurance rate is the lowest on any religious building in the country, it being about nine cents per hundred.

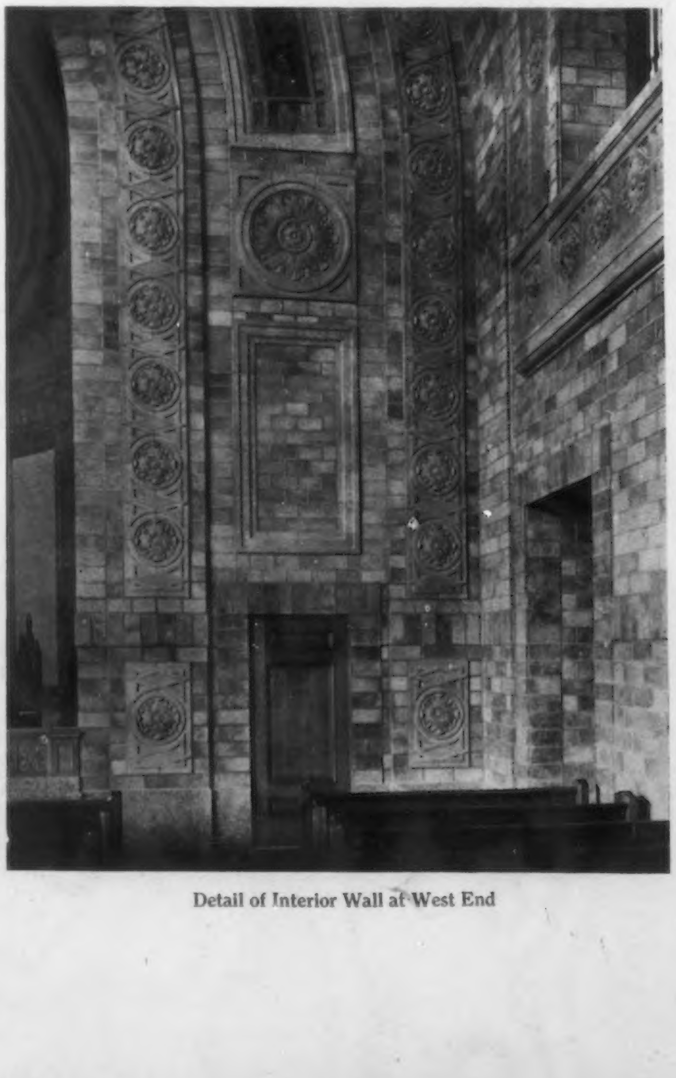
The cost of the structure including all furnishings, except those of the school building, was about $275,000. The entire group contains about 1,000,000 cubic feet. The height from the sidewalk to the top of the dome is 95 feet, and through a well developed scale, evident in both façades, the building admirably fits it site. It is an interesting expression of synagogue architecture.



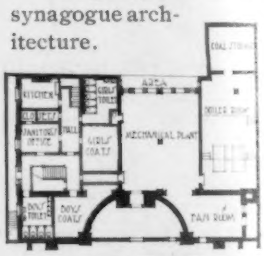
Third Floor Plan



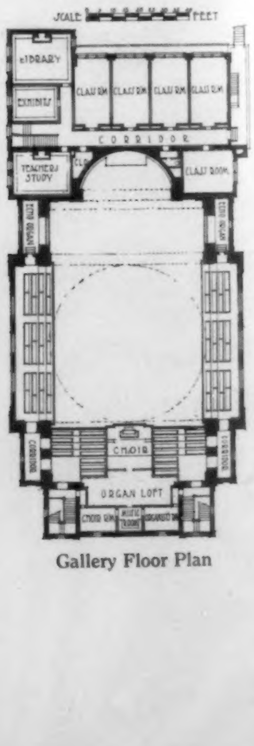
Main Floor Plan



Detail of Interior Wall at West End

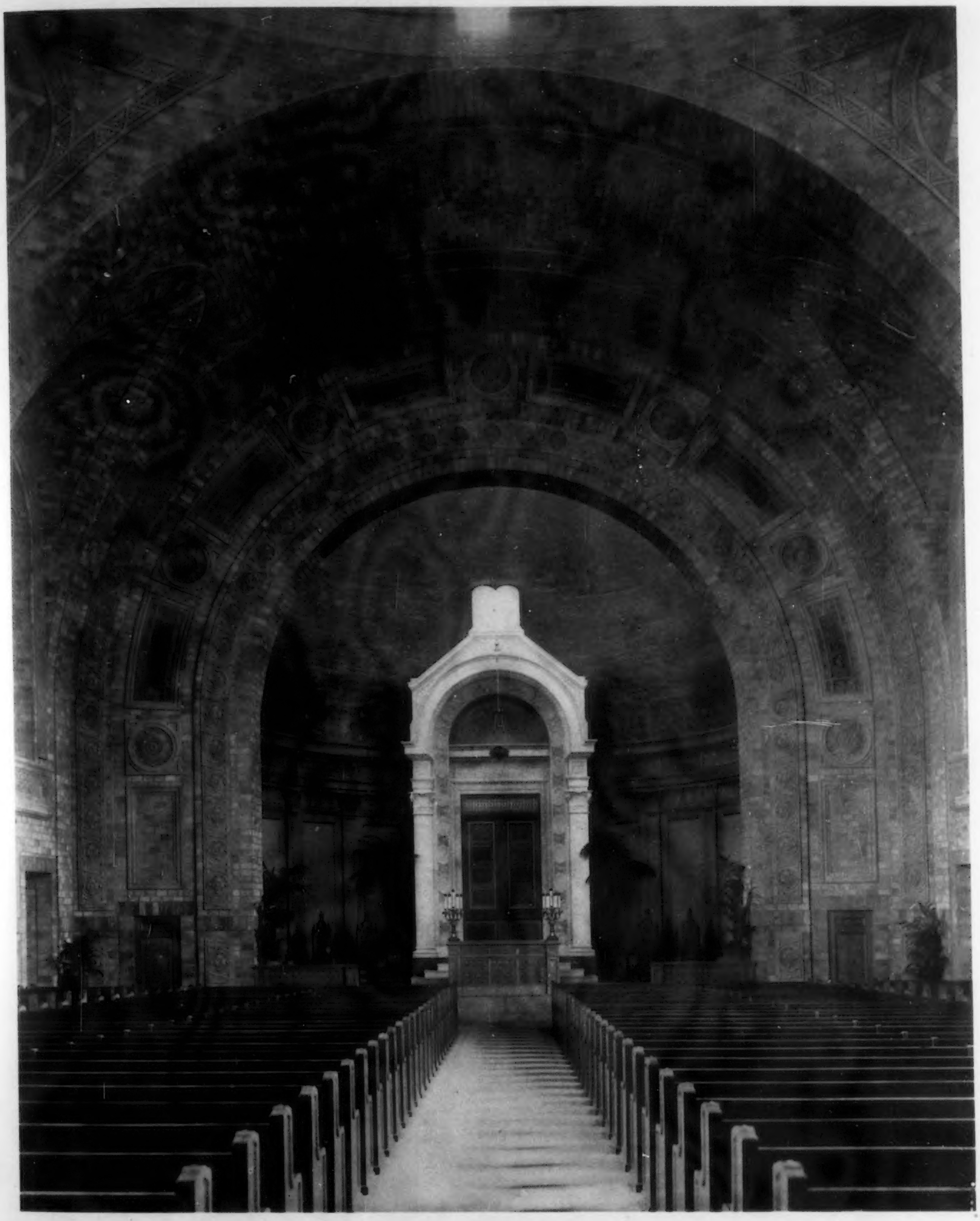


Basement Floor Plan



Gallery Floor Plan

B'NAI JESHURUN TEMPLE, NEWARK, N. J.
ALBERT S. GOTTLIEB, ARCHITECT



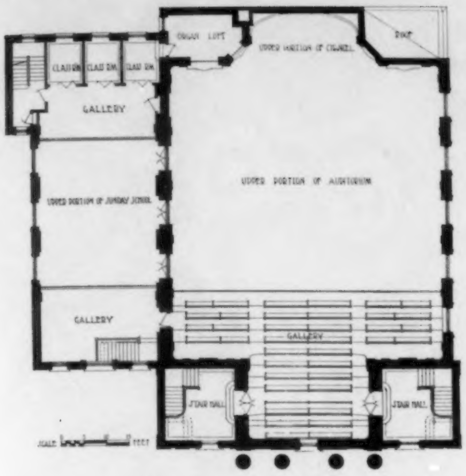
INTERIOR VIEW LOOKING TOWARD ALTAR

B'NAI JESHURUN TEMPLE, NEWARK, N. J.

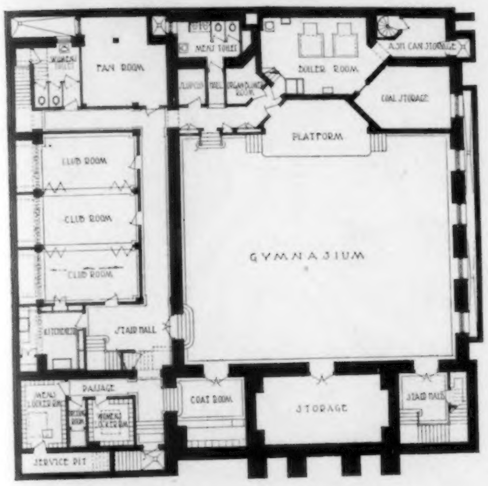
ALBERT S. GOTTLIEB, ARCHITECT

WEST PARK PRESBYTERIAN CHURCH, WEST 174TH STREET, NEW YORK, N. Y.

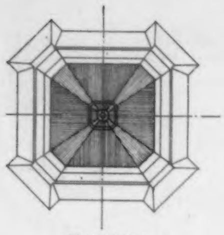
CARRERE & HASTINGS, ARCHITECTS



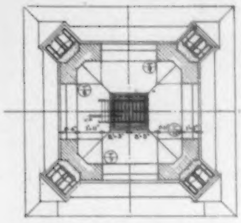
GALLERY FLOOR PLAN



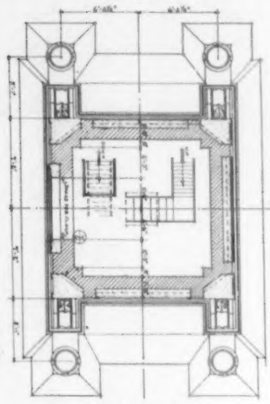
BASEMENT FLOOR PLAN



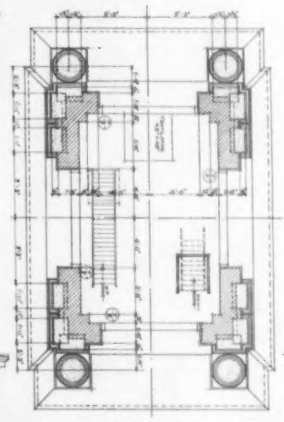
TOP VIEW



PLAN AT E—E



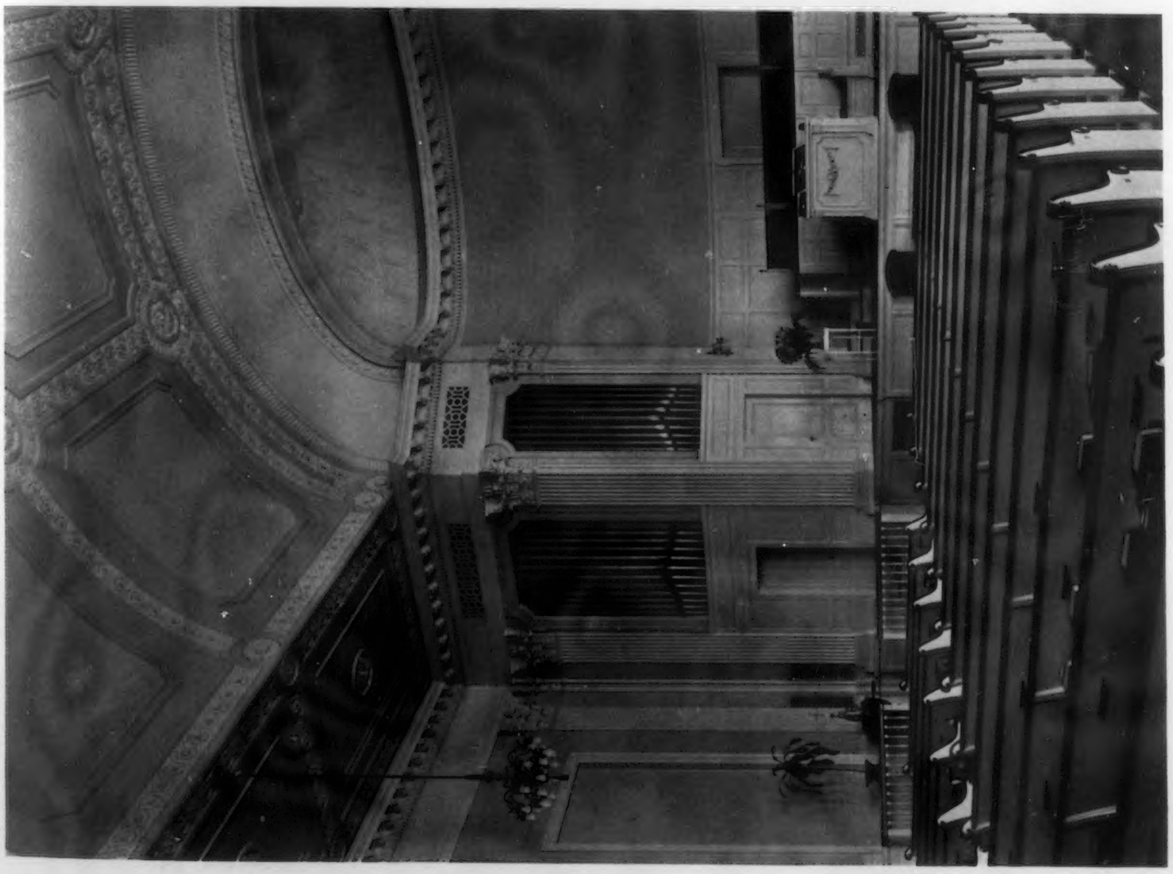
PLAN AT C—C



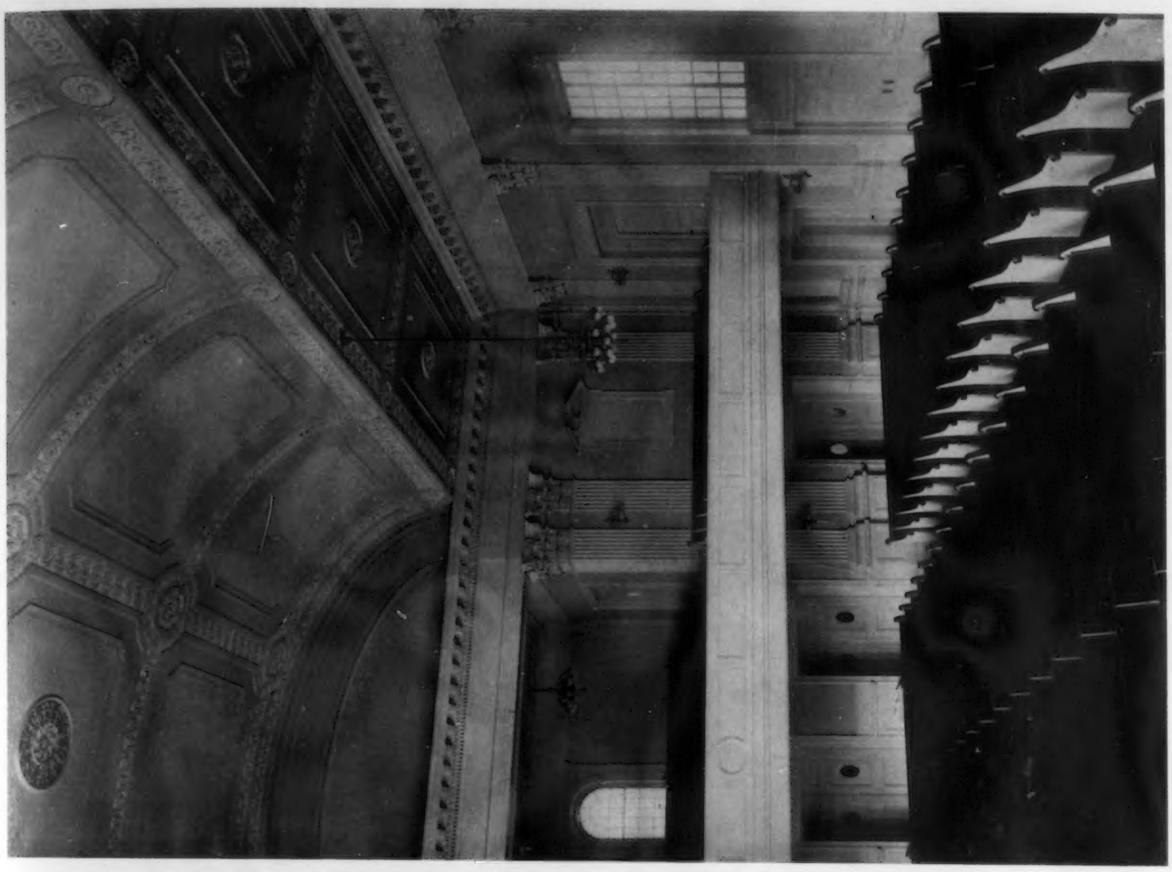
PLAN AT A—A

WEST PARK PRESBYTERIAN CHURCH, WEST 174TH STREET, NEW YORK, N. Y.

CARRERE & HASTINGS, ARCHITECTS



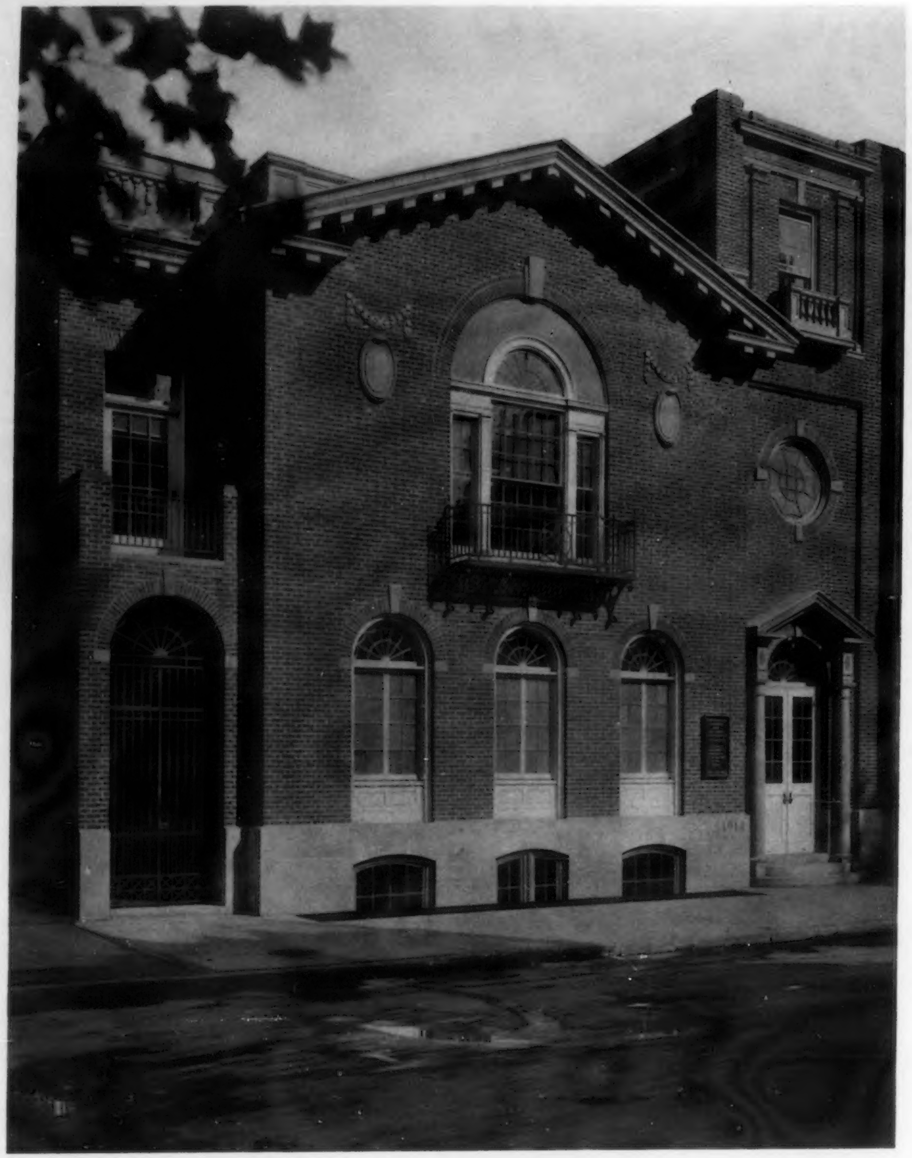
INTERIOR VIEW LOOKING TOWARD CHANCEL



INTERIOR VIEW LOOKING TOWARD GALLERY

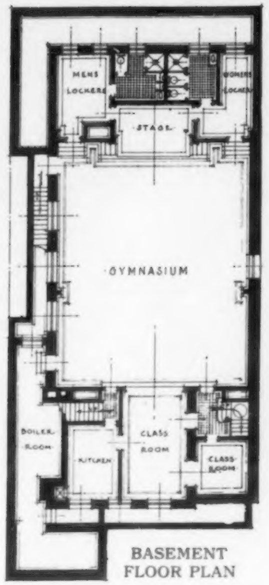
WEST PARK PRESBYTERIAN CHURCH, WEST 174TH STREET, NEW YORK, N. Y.

CARRERE & HASTINGS, ARCHITECTS

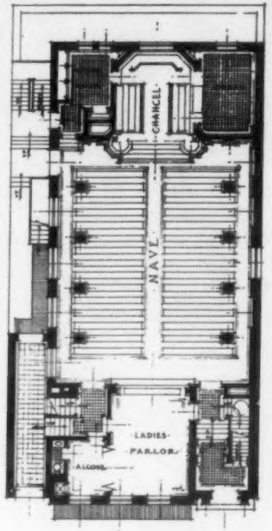


VIEW OF PRINCIPAL FACADE

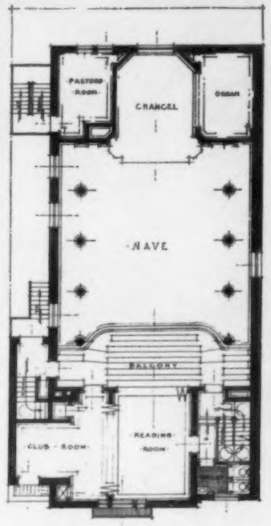
INTERIOR LOOKING TOWARD CHANCEL



BASEMENT FLOOR PLAN



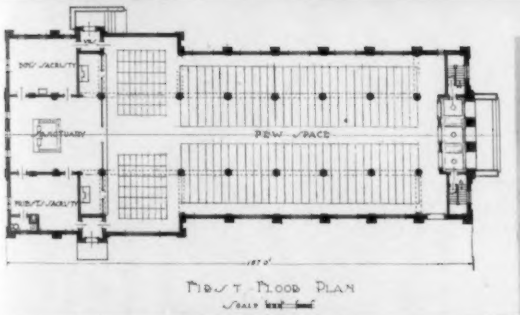
GROUND FLOOR PLAN



BALCONY FLOOR PLAN

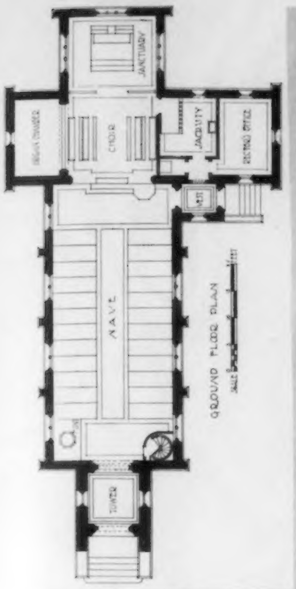
ST. JAMES' PRESBYTERIAN CHURCH, WEST 137TH STREET, NEW YORK, N. Y.

LUDLOW & PEABODY, ARCHITECTS



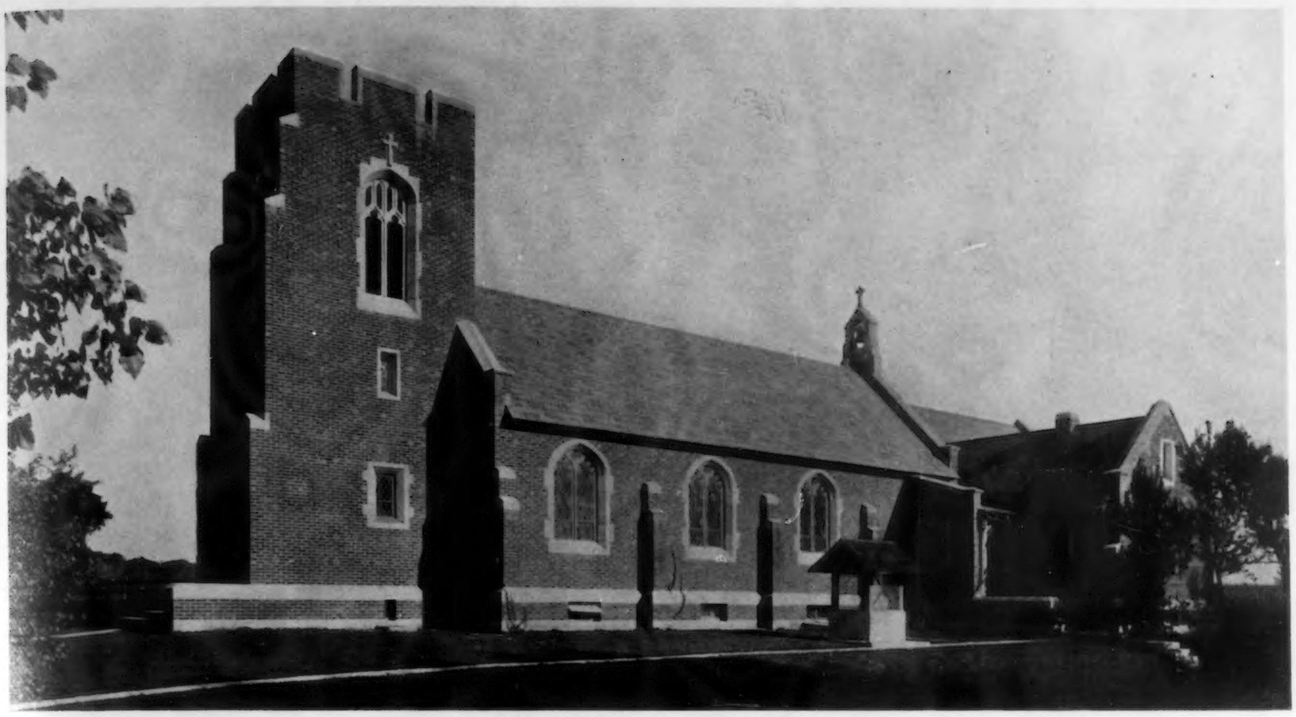
CHAPEL OF THE DOMINICAN SISTERS OF ST. AGNES, SPARKILL, N. Y.

DAVIS, McGRATH & KIESSLING, ARCHITECTS

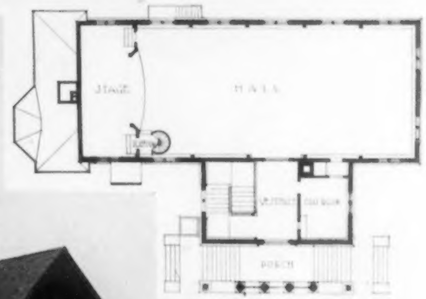


ALL SAINTS' EPISCOPAL CHURCH, WEST NEWBURY, MASS.

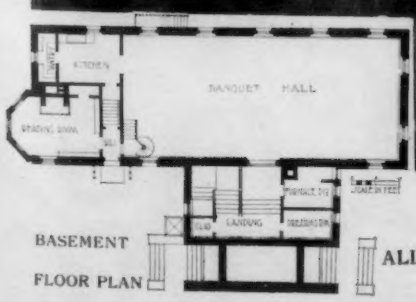
CLARK & RUSSELL, ARCHITECTS



SIDE VIEW OF ALL SAINTS' CHURCH



VIEW OF PARISH HALL FROM CHURCH



BASEMENT FLOOR PLAN

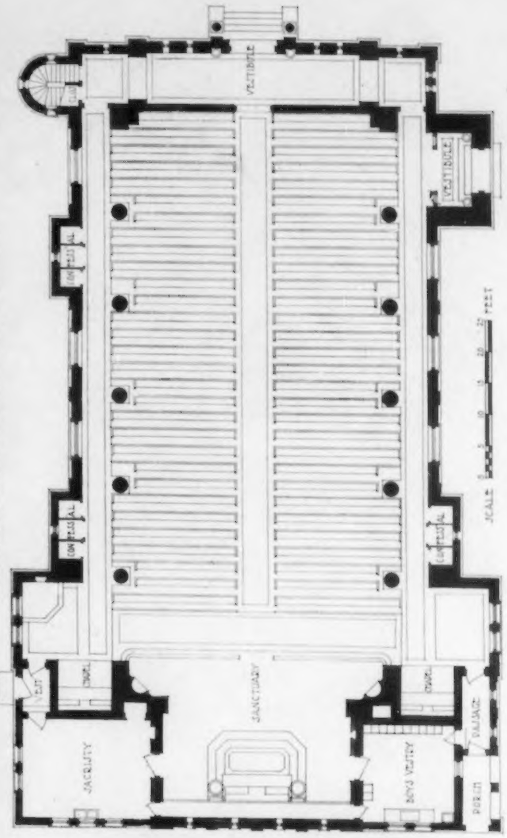
ALL SAINTS' EPISCOPAL CHURCH AND ST. JOHN'S PARISH HALL, WEST NEWBURY, MASS.

CLARK & RUSSELL, ARCHITECTS

ST. MARK'S ROMAN CATHOLIC CHURCH, DORCHESTER, MASS.

BRIGHAM, COVENEY & BISBEE, ARCHITECTS

INTERIOR VIEW LOOKING TOWARD ALTAR



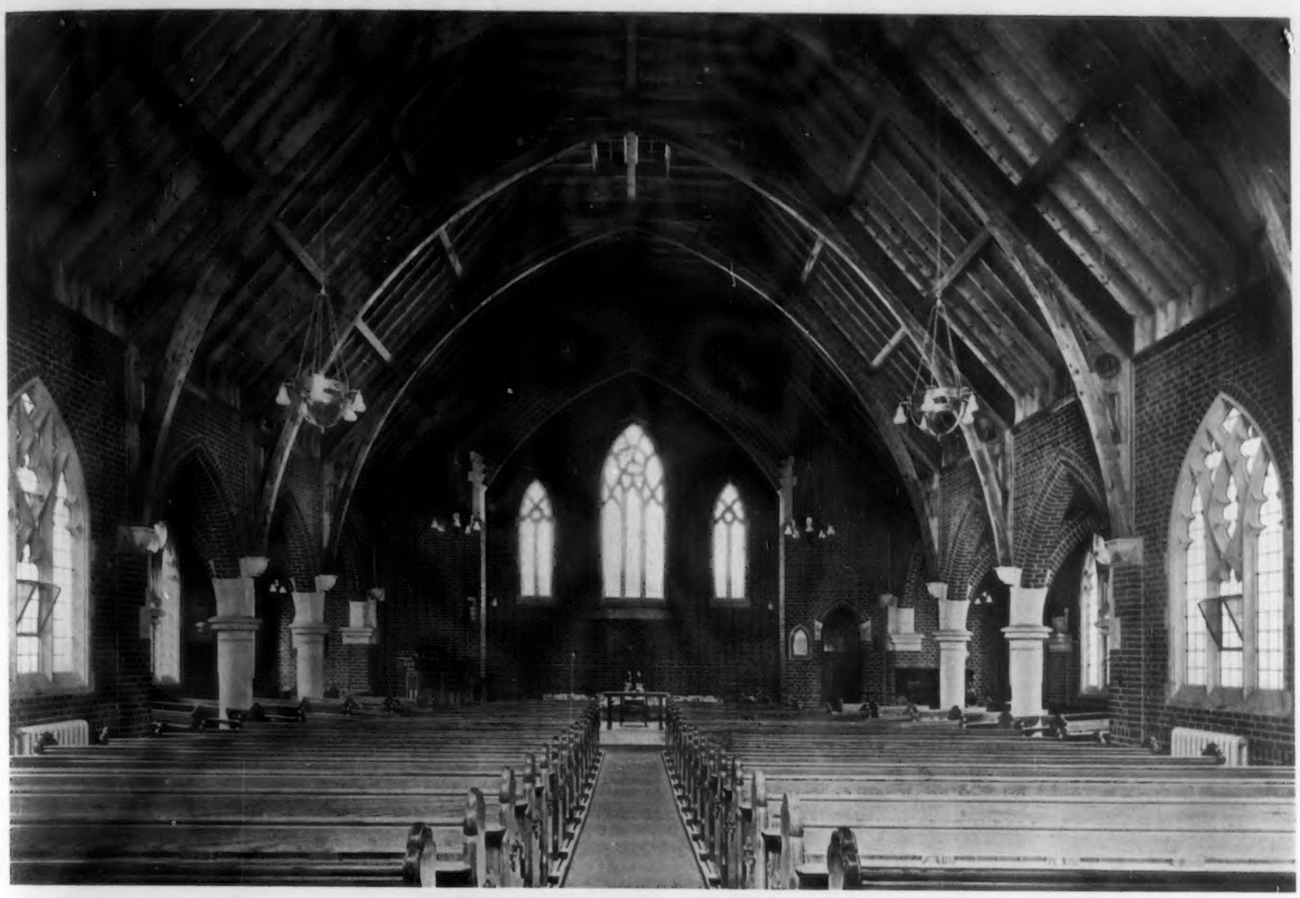
GROUND FLOOR PLAN

VIEW OF PRINCIPAL FACADE

ST COLUMBA'S ROMAN CATHOLIC CHURCH, JOHNSTOWN, PA.

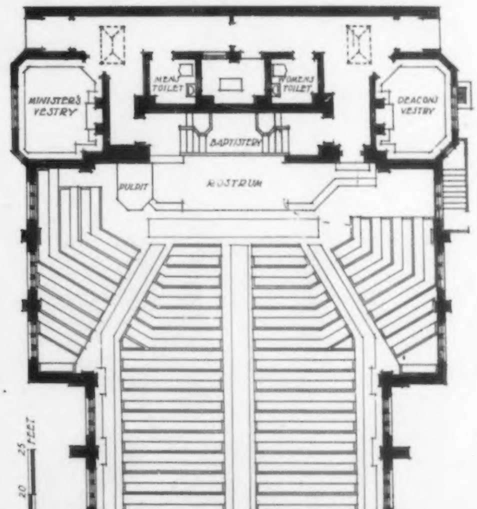
JOHN T COMES, J E KAUZOR, ASSOCIATE ARCHITECTS

BAPTIST MEMORIAL CHURCH, TWICKENHAM, ENGLAND
INGALL, BRIDGEWATER & PORTER, ARCHITECTS



INTERIOR VIEW LOOKING TOWARD ROSTRUM

INTERIOR VIEW LOOKING TOWARD ENTRANCE



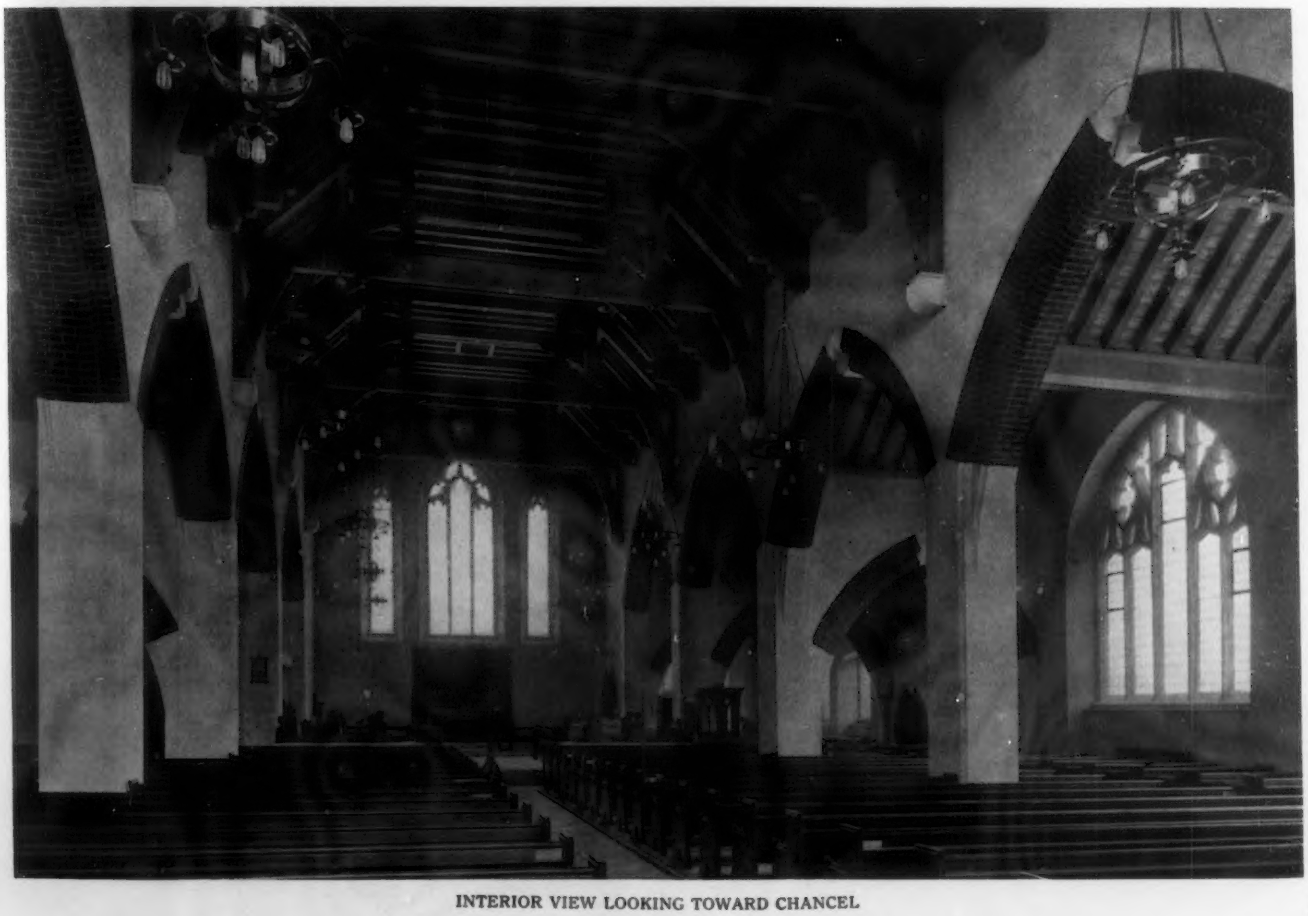
GROUND FLOOR PLAN

BAPTIST MEMORIAL CHURCH, TWICKENHAM, ENGLAND

INGALL, BRIDGEWATER & PORTER, ARCHITECTS

ALL SAINTS' CHURCH, GOODMAYES, ESSEX, ENGLAND
P. K. ALLEN, ARCHITECT

VIEW OF EXTERIOR FROM REAR



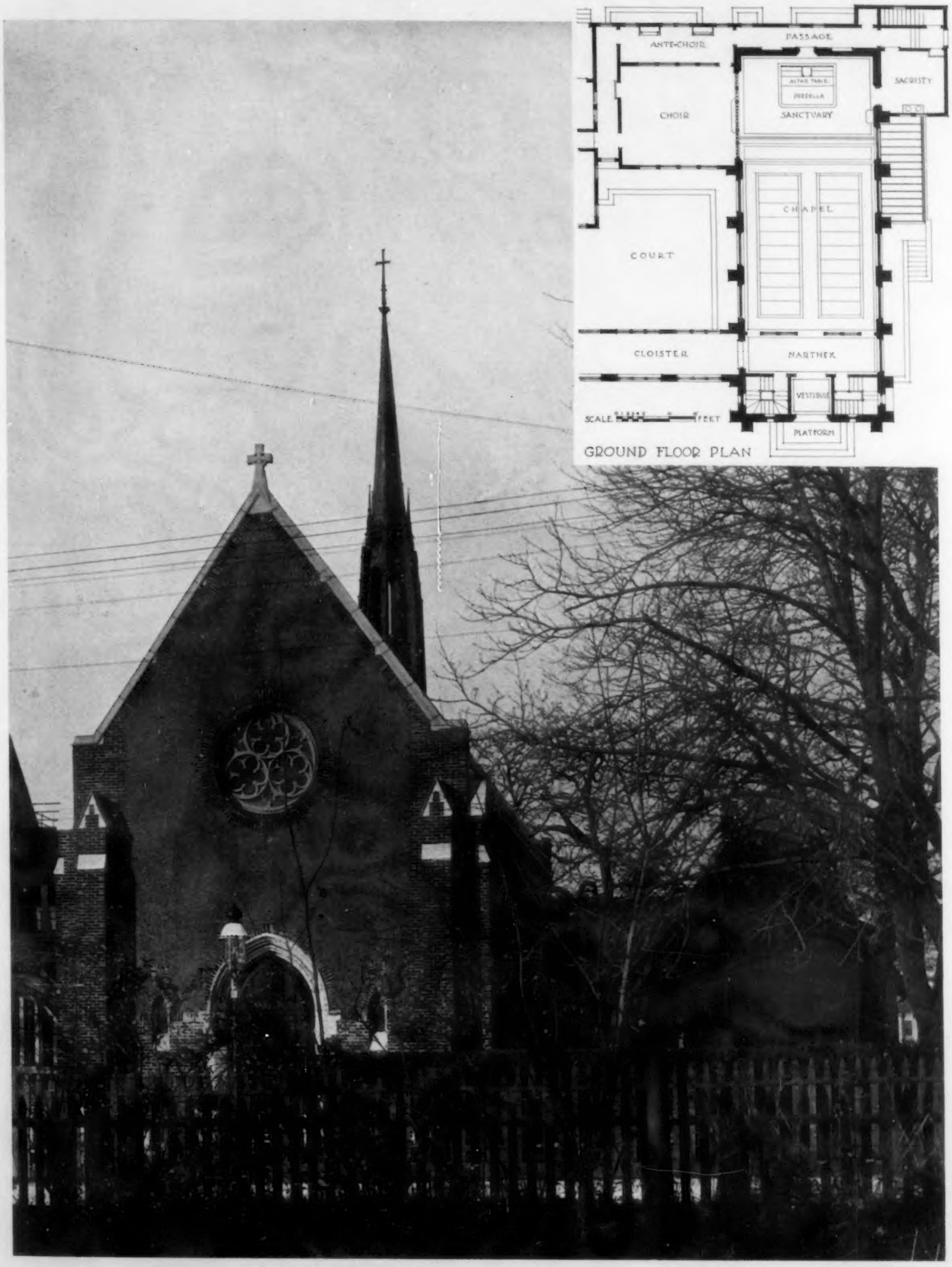
INTERIOR VIEW LOOKING TOWARD CHANCEL

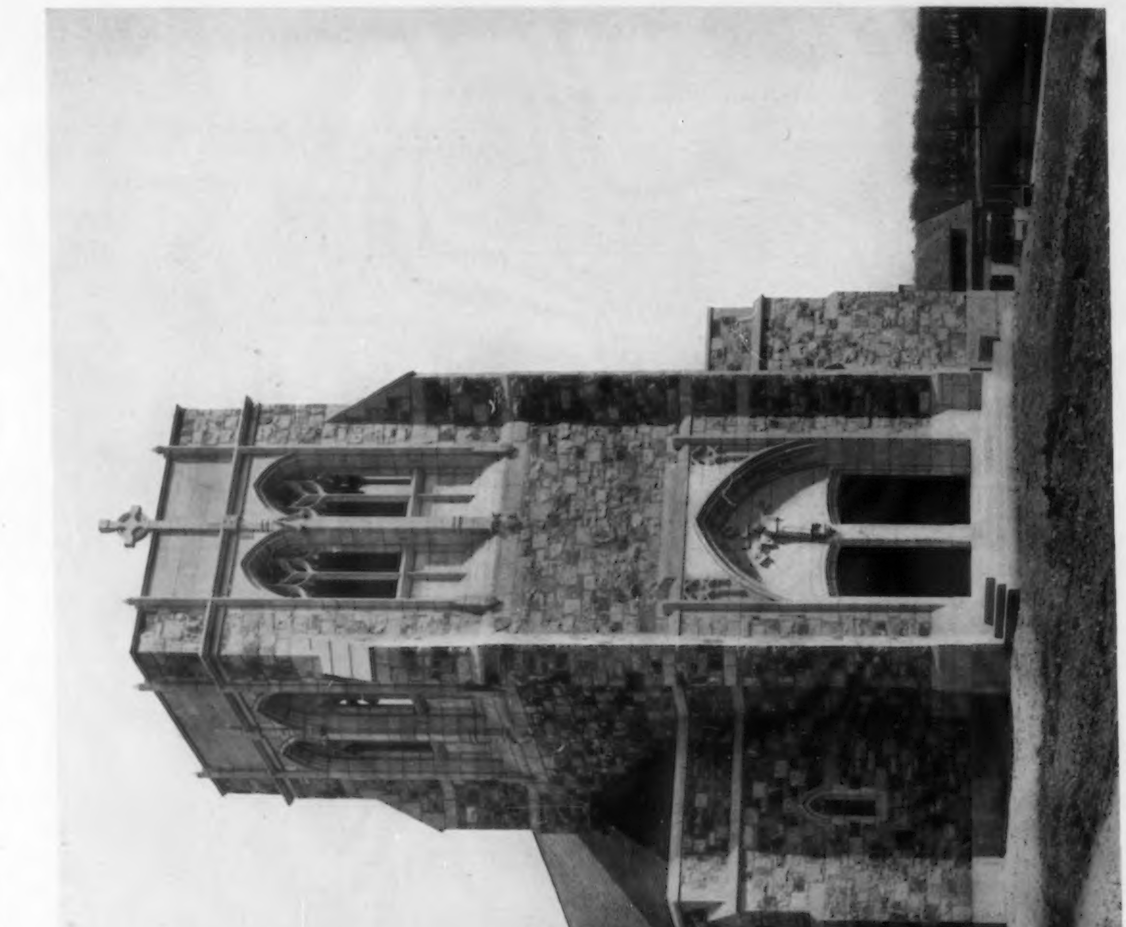
ALL SAINTS' CHURCH, GOODMAYES, ESSEX, ENGLAND

P. K. ALLEN, ARCHITECT

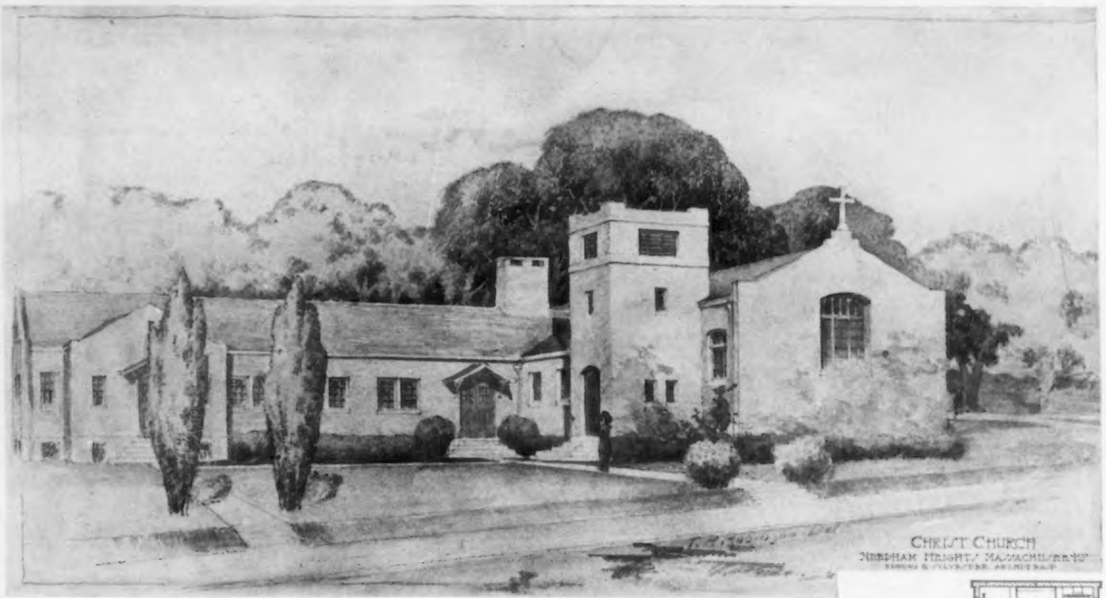
Chapel for the Ladies of the Cenacle, Newport, R. I.

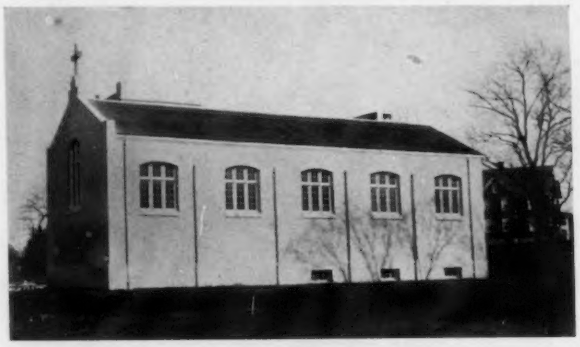
MAGINNIS & WALSH, ARCHITECTS.

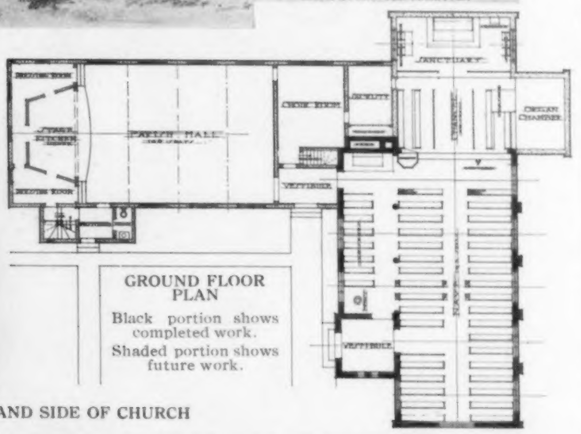




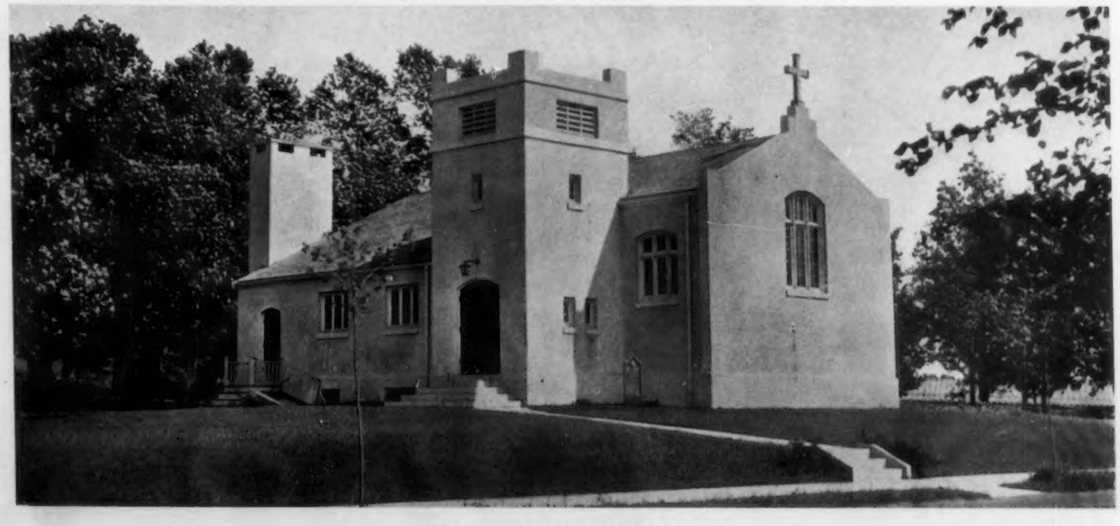
ROMAN CATHOLIC CHAPEL, NORTH WEYMOUTH, MASS.
CHARLES R. GRECO, ARCHITECT







PERSPECTIVE DRAWING OF COMPLETED GROUP AND SIDE OF CHURCH



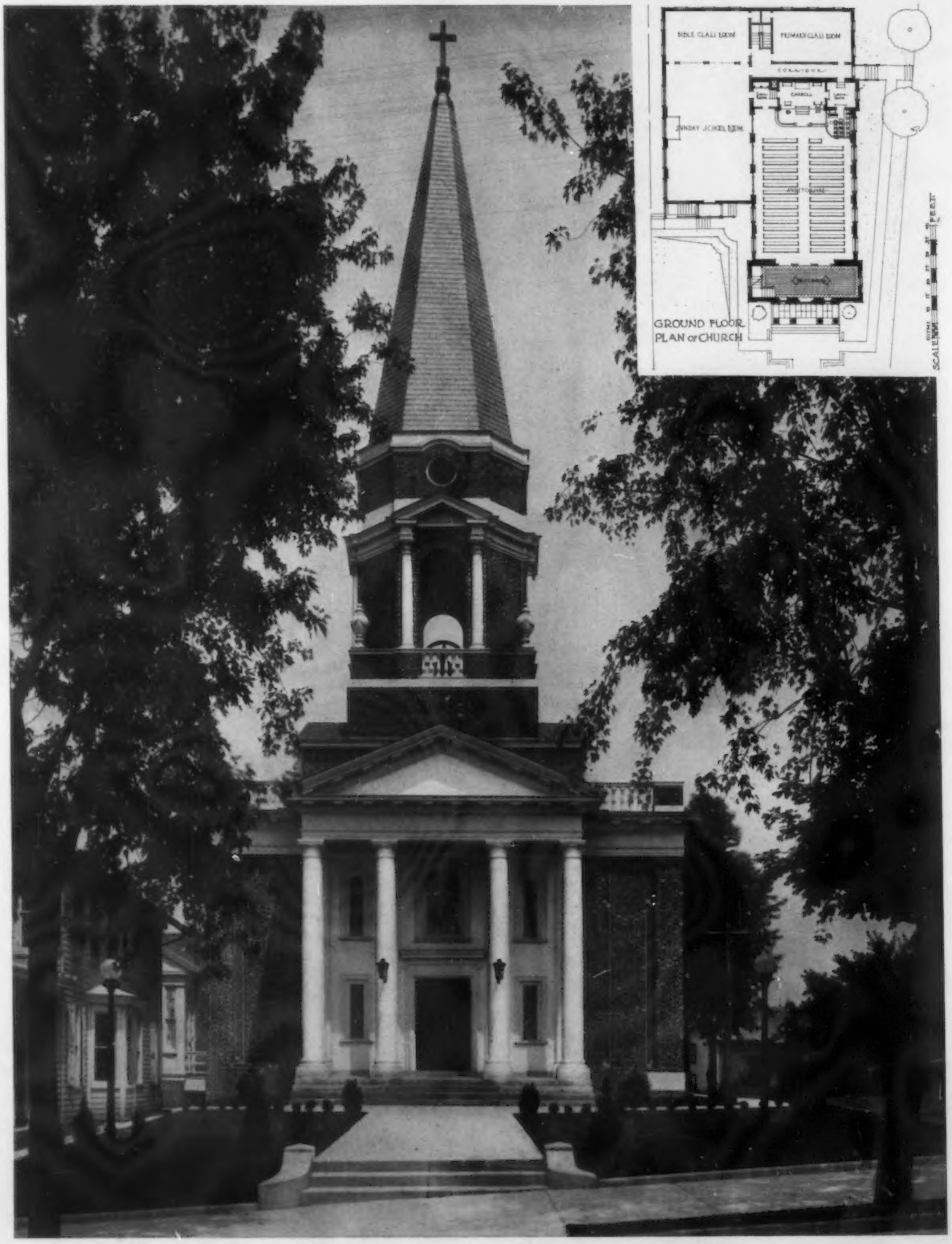
VIEW OF PORTION CONSTRUCTED

CHRIST EPISCOPAL CHURCH, NEEDHAM HEIGHTS, MASS.

EDMUND Q. SYLVESTER, ARCHITECT

Bethany Reformed Church at Ephrata, Pa.

FRANK SEEBURGER AND CHAS. F. RABENOLD, ASSOCIATE ARCHITECTS.



The Heating and Ventilating of Churches.

By HAROLD L. ALT.

THE ventilation problem in the modern church presents many angles for consideration, not the least of which is the fact that numerous churches are laboring under heavy debt and are, therefore, not at all anxious to spend any larger sum on the heating and ventilation end than is absolutely necessary. Added to this is the difficulty that some churches try to economize by standing cold during the week and heating up on Sunday only — a mistaken and dangerous policy.

The masonry construction of most churches, especially edifices built some time ago, is usually much heavier than that of a corresponding theater of equal size and this results in extreme heat absorbing capacity when churches once get cooled down.

Another consideration, and a most essential one, is that of noise, many churches having given up their ventilation equipment in disgust on account of not being able to use their systems during services owing to the objectionable noise.

Therefore, a heating and ventilating system to give the utmost satisfaction possible should combine (with all the other usual desirable qualities) a low first cost, a minimum amount of noise in operation, great capability of quick heating, and still must be simple enough to be operated by more or less non-expert janitors.

Owing to the auditorium-like arrangement there is no need of the individual duct system in the ordinary church, since the air from all sides of the building intermingles almost at once and forms a fairly equal temperature at various heights above the floor; for the same reason the double duct system need not be considered. In fact, the trunk line system seems to supply every needed function, being at the same time cheaper and simpler than either the individual or double duct system.

For the small or moderate sized country and suburban church the modern furnace has much to recommend it, many manufacturers paying particular attention to this sort of work. In the first place, it is absolutely quiet in operation, does not require any expert knowledge to run, cannot freeze up during the week, and supplies enough fresh air to meet moderate ventilation requirements. A recirculation connection combined with a carefully designed furnace equipment of this sort is a very practical solution of certain church requirements.

In a large modern city church, which is the style of building with which this article particularly deals, the limitations of satisfactory furnace installations are exceeded and some form of hot blast or fan system should be substituted.

Assuming the trunk line type of system has been settled upon for a large modern city church, the next point to be taken up is the location of inlets and outlets. A hot air inlet in the aisle is objectionable on account of its being constantly walked over (thus receiving an excessive amount of dust), its poor distribution of the entering air (even when two or three such registers are used), and its unpleasant effect on the persons walking over it. Neither are hot air inlets under the pews satisfactory, since they result in discomfort to persons sitting directly over them when the temperature is high and must force more or less of their air through and around the clothing worn by the members of the congregation before this air rises to the breathing line.

Neither, on the other hand, do inlet registers in the ceiling and the use of downward ventilation entirely rid us of all our troubles, as the unusually high windows (present in most churches) result in very strong cold drafts downward, falling on those seated beneath such windows. All things considered, the most satisfactory location of inlet openings is in the window sills when the incoming warm air counteracts the cold down drafts resulting in a tempered mixture of atmosphere which is thrown outward toward the center of the congregation.

There is no objection to exhausting from outlets located beneath the pews and this avoids the exposing to view of large exhaust registers which would otherwise appear in the walls or ceiling. In fact, when the window sill inlet is used, better results are obtained with floor exhaust outlets than with openings in the ceiling. This is apparent from the fact that the natural flow of air from the window sill inlet toward the ceiling outlet would not cross the breathing line of a single member of the congregation.

A cross section showing just such a window sill inlet and pew outlet is given in Fig. 1; both the supply and exhaust ducts in this particular case are run on the ceiling of the basement below.

Some systems only deliver supply air and let it find its way out through natural leakage. It does not seem, however, that it is reasonable to expect more than one, or at the utmost two, air changes per hour to find egress by this method. If more air (as is usually the case) is being supplied than two changes per hour, some provision should be made for taking care of the additional air furnished.

Many architects object to a radiator exposed to the view of the congregation, a much simpler expedient being the installation of a few additional rows of heaters at the fan and to warm as well as ventilate. This method involves the advantages of eliminating all the radiators together with their steam and return piping, which would otherwise run promiscuously around the basement, and also cuts the first cost.

Practical trial, however, has developed several severe and radical failings in a purely hot blast system used without direct radiators. One of these is the well known fact that while a hot blast system is at best rather slow in warming up a cold building (even with recirculation), the heavy walls of a church absorb so much of the first heat delivered to the room that a hot blast system otherwise perfectly adequate will have to begin operation Saturday afternoon to bring a cold building up to 70 degrees by 10 A.M. Sunday morning. This causes a jump in the electric power bill during cold weather that is nothing less than startling.

Another disadvantage is the inability to warm any room during the week without starting up the whole system and running the large fan. To some extent this may be overcome by a more or less complicated system of dampers, but can never compare in economy with the use of direct radiators for heat alone, and the blast system solely for ventilation effect.

The drawings shown in Figs. 2 and 3 are the basement and first floor plans of a church built a few years ago in which the hot blast system is used in general without radiators.

This system was carefully designed in the extreme, flues being run to supply each class room individually so that the doors of the class rooms could be shut, if desired, and ventilation still carried on.

The air was vented through the roof by means of two ventilators, one over the Sunday-school room and the other over the church. In the societies' room S, where the air supplied amounted to more than would be lost through natural leakage, a vent X was cut through into the church to allow a relief of the back pressure which might otherwise be created in the confined room. This hot blast system was most carefully figured and installed by engineers co-operating with the architect, and everything to make the system a success, which could be done, was done. In spite of this, as might be expected, the objections previously mentioned were found to exist in this installation. While a recirculation connection R (Fig. 3) was provided in the cold air down take from the roof so that the outside cold air could be shut off and that in the church revolved over and over again and ventilators V provided, it was found impossible to let the building get cooled down during the week and then heat it up on Sunday morning.

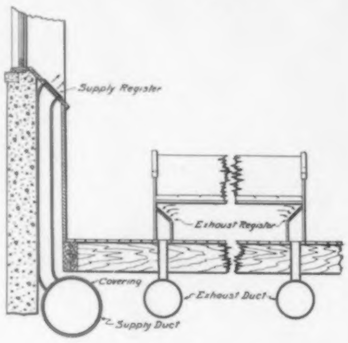


Fig. 1


Fig. 2


Fig. 3

By starting Saturday afternoon and recirculating the air, the original 40-degree temperature (to which the interior of the church often fell during the week) could be raised up to about 60 degrees before shutting down for the night. During the night the temperature would drop back to somewhere around 52 degrees, and by starting up at 6 A.M. Sunday morning, it was possible to get as high as 65 degrees by 10.30 A.M. Continued operation during the day even in extreme weather shoved the thermometer up above 70 degrees before evening, showing that the apparatus was amply able to maintain a proper temperature as soon as the walls ceased absorbing large quantities of heat.

To those who might say the apparatus should be increased, I would answer that this increase must amount to at least 100 per cent over that already installed, since it would be necessary to accomplish the same heating effect (minus the drop during the night, of course) in about one-half of the time at present required.

To those claiming the building should be kept warm during the week, I would answer that this would entail a total of more hours of fan operation per week as well as additional coal, thereby increasing not only the coal expense, but the power bill as well.

Let us turn away from the combined hot blast heating and ventilating system and see what results are attained when the warm air is used solely for ventilation effect and the heating accomplished by direct radiators.

In the first place, this means that steam supply and return pipes must be run practically all over the basement as well as the galvanized iron pipes used for the ventilating system, and that these pipes must be arranged so as not to interfere with each other. It also means a slightly higher first cost, this not being as much of an increase as might be expected, owing to the fact that the fan heater can be reduced to about 50 per cent of the capacity otherwise required, besides which it is also unnecessary to provide a recirculation connection.

The advantage of heating positively all rooms regardless of direction of the wind or their isolated location, is obtained only with this system. By the simple expedient of valving each riser, and, possibly, two or three points in the mains, this heating can be accomplished without warming up the whole system and without the expenditure of any electric power whatsoever.

Moreover, no power need be used to operate the fresh air system until the congregation is fully assembled, and often in bad weather when the attendance is small there is no discomfort experienced for an hour or so without operating the fan at all. With a proper amount of direct radiation installed it is possible to warm up a building in four or five hours, and the maintaining of a small fire under the boiler during the week will generate sufficient vapor to keep the building temperature from going down to a very low point, making it much easier to heat up than without the direct radiation.

As far as gravity air systems with the air in the flues heated by indirect steam or hot water radiators are concerned, they are *naturally* unsuited for church work. They

have usually no practical way of recirculation and, owing to most of the outlets being located at or near the floor level, the velocity of the heated air is very small.

With a heat stack hung on the basement ceiling it is often less than 24 inches to the outlet in the floor above, which means a great decrease in velocity; this requires of course excessive radiation and an undue number of outlets which must also be of much larger size than required with a fan.

In fact, a church in which a system of the steam heated indirect gravity kind *was* installed in connection with an old type of propeller fan is shown in Figs. 4 and 5, these being the basement and first floor plans *after* the heating was remodeled. This alteration was made, needless to say, by the unsatisfactory operation of the indirect radiator system first installed; but the desire to avoid additional expense caused the utilization as far as possible of the old registers, which accounts for some of the idiosyncrasies in register shape and location as shown; otherwise the system is good.

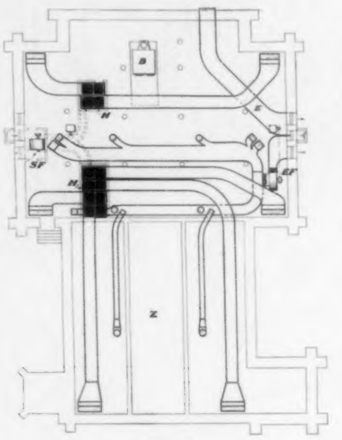


Fig. 4

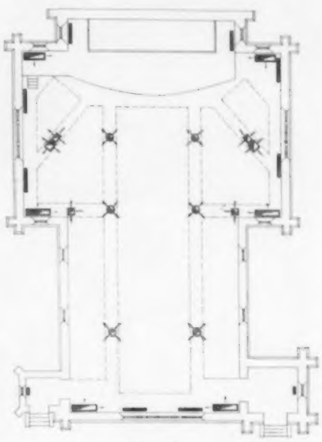


Fig. 5

Some of the readers of this article may question the showing of a system which is not "ideal" in every particular. Sad to say, systems "ideal" in every particular are few and far between. It is the purpose of this article not so much to theorize and vaporize on what should be — and is not — as it is to take practical installations which serve their purpose reasonably well — and which *are installed*.

It will be seen by referring to Fig. 4 that a fresh air chamber is located on one side of the basement in which a vertical down-discharge fan SF is located, the fan drawing the air out of the chamber and discharging it into an underground duct. The duct splits into two branches, one branch going to the rear heater chamber and the other to the front heater chamber. The pressure produced by the fan drives the air upward in the heating chambers and through the indirect heaters H into the supply ducts on the ceiling, which carry the heated air to the various supply registers. This air is *not* intended to heat it, serving to *ventilate* only; the heating is accomplished by the direct radiators shown in Fig. 5. The system would have been improved had the supply registers been placed under the windows, but money was not available to permit this radical change. An elevation of the supply fan and one heater chamber is shown in Fig. 6.

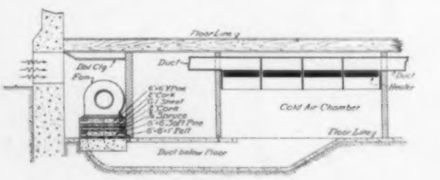


Fig. 6

The exhaust is pulled out through the various exhaust registers by a fan EF (located on the other side of the basement across from the supply fan), which discharges the air on the opposite side of the building. The discharge air from the adjacent Sunday school is carried out through the duct E, although this does not affect the church system in any way; Z indicates unexcavated cellar.

This system has the advantage of supplying fresh, *cool* air, if desired, just as efficiently as hot air and keeps the power bill at the minimum.

A most important matter in the installation of a church system is the elimination of noise to the greatest possible extent. Of course, this is *always* desirable in any system, but it must receive particular attention in churches. The average church while having massive masonry walls for some reason seems to have poorly constructed floors; a few have concrete or terra cotta floor constructions but most have only wooden floor joists with plaster below and flooring above, this construction having no more sound proof qualities than possessed by the ordinary frame house. Therefore, while noise is specially objectionable, the normal construction means of deadening such noise is unusually poor.

Noise in fan systems is generally produced by one or more of several distinct causes. These may be divided into fan noises (caused by too high speed or by improper alignment), air noises (caused by high velocities), belt noises (when belts are used), a motor hum (present to greater or less extent in all motors), and vibration noises caused by improper or unstable foundation.

In cases of improper alignment, of course, the remedy is easily applied; while maintaining air velocities of 1,200 feet per minute or less will generally prevent the sound of the air moving through the ducts. The matter of fan speed should be carefully looked into before specifying a fan; in general, a tip speed not to exceed 3,000 feet per minute will be quite conservative, but the recommendations of the manufacturers of the particular fan specified should also receive consideration.

Belt noise is always present where the motors are belt connected to the fans, but this trouble may be aggravated by looseness and improper joints.

The hum of the electric motor is a sound of apparently small moment, yet in alternating current motors it is of a peculiarly penetrating character. Many engineers regard the motor hum as deserving of more consideration than the fan which the motor drives. Let us see what means may be taken to overcome the various noise troubles.

In Fig. 9 is shown a fan and motor installed in what may be termed a "first-class standard manner." Both the fan and motor are set on substantial concrete founda-

tions, A being a 4 by 6 inch yellow pine frame halved together at the corners and bolted to the foundation bolts, the heads of which are countersunk into the frame. The fan is lagscrewed to the frame and a 2-inch cork separator pad C is placed between the frame and the concrete foundation F; the motor is set in a similar manner. With ordinary first-class apparatus, properly installed, and masonry floor construction this arrangement is fairly satisfactory. With wooden joists, plaster ceiling, and common flooring above, the motor hum from this installation will be plainly audible in the church and other more efficient means should be adopted.

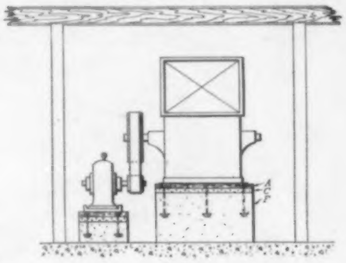


Fig. 7

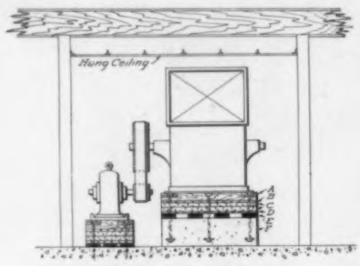


Fig. 8

In Fig. 7 is shown a method of confining the motor hum so as to render it unobjectionable, but this method does not kill the noise of the belt or the fan. A, C, and F in this figure indicate the same materials as in Fig. 9, while the canvas joint shown should be used on any and all fans wherever installed. It is impossible to operate a fan without having a certain amount of noise from the moving air and revolving parts; this is transmitted from the fan to the duct which telephones it direct to the room outlets unless the metallic connection is broken by the canvas connection, this being usually made about 8 inches long. With Fig. 7 the noise still might be heard to an objectionable extent in the church, but on the other hand again it might not, this depending largely on the fan and its peculiarities.

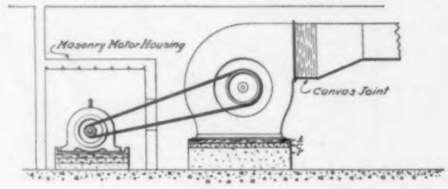


Fig. 9

In Fig. 8 a much superior method of sound deadening is shown, this having proved satisfactory in almost every case. Here A is a yellow pine frame as previously described; B is ⅞ inch tongued and grooved stock; C consists of two layers of 2-inch cork, and D is another layer of ⅞-inch boards, binding the whole together; E is piano felt 1 inch thick and in strips 6 inches wide; while F is a common concrete foundation. Sometimes lead or rubber washers are used under the foundation bolt nut heads which are recessed in the frame, the fan being lagscrewed as before, while the hung ceiling over the entire apparatus gives a double dead air space between the fan room and the church. Of course it is necessary to carry the regular basement ceiling straight through on the bottom of the joists in order to produce the double space, but after being thus treated this installation may be safely located under any portion of the church.

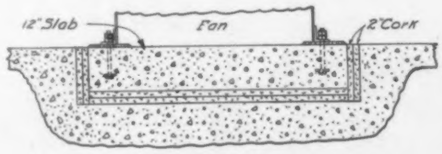


Fig. 10

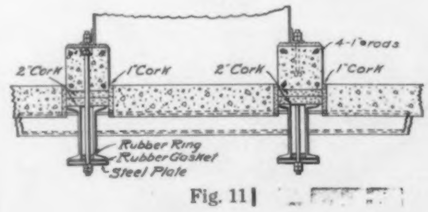


Fig. 11

Where basement head room is scanty, various expedients are adopted, the best of which lower the grade of the fan room floor until the method shown in Fig. 8 can be used. Where this is not practical, an expedient such as is shown in Fig. 10 may be used. Frankly, this will not be as efficient as the method shown in Fig. 8, but it is fairly satisfactory.

When exhaust fans are located on upper floors the problem is also best solved by the scheme shown in Fig. 8, the foundation F being carried on suitable structural steel supports. Where the head room is limited, a structural steel support arranged as shown in Fig. 11 will also give good results.

One thing that should be remembered in all fan installations carried on steel supports is "mass in the foundation." In other words, there must be sufficient weight in the foundation mass to absorb the vibration of the fan for, although small, this vibration is present just the same.

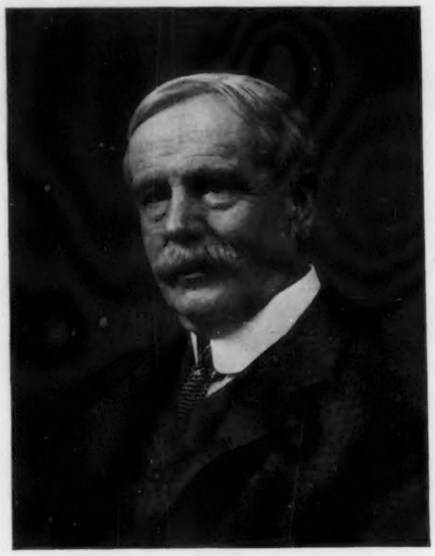
As an example of this in aggravated form it may be interesting to note the case where one of the large public service companies recently installed some blowers for forced draft purposes. These blowers were driven by direct connected steam turbines, thus eliminating all reciprocating parts, but of course they operated at a much higher speed than the ordinary fan. The blowers were located on a steel platform constructed of 15-inch I beams swung across the firing aisle between the two rows of boilers and supported on the steel building columns. The beams were designed with a factor of safety of twelve and had a 4-inch reinforced concrete slab to form a walkway around the apparatus.

In spite of all that the manufacturers' experts and the company's engineers could do, this platform shook so when the apparatus was started that it was impossible to stand on it without holding on to the handrail. Numerous suggestions for remedy were made and tried out, but none sufficed until a common wooden form was built under the bottom of the I beams and the 4 inch concrete slab torn off and a new slab 15 inches deep, extending from the top to the bottom of the beams, was poured in its place. No further trouble from vibration was experienced simply because the increased weight of the mass was sufficient to absorb the vibration.

The same effect in a lesser degree is present in every fan carried on steel members, and the presence of a 12-inch concrete slab under the entire area covered by both the fan and the motor, while a simple matter during construction, will save much annoyance that might occur.

√

As He Is Known, Being Brief Sketches of Contemporary Members of the Architectural Profession.



WILLIAM RUTHERFORD MEAD

WILLIAM RUTHERFORD MEAD, son of Larkin Goldsmith and Mary Jane (Noyes) Mead, was born on Aug. 20, 1846, in Brattleboro, Vt. After passing through the local high school, he went to Norwich University from 1861 to 1863, and then entered Amherst College, graduating in 1867, and at once commenced the study of architecture in the office of Russell Sturgis. In 1871 he went abroad, studying in Florence for a year and then traveling for three months.

In 1872 he formed a partnership with Charles F. McKim, and in 1878 Stanford White entered the firm, which was thenceforth known as McKim, Mead & White. Mr. Kendall, Mr. Fenner, and Mr. Richardson became partners in January, 1906. Mr. White died in June, 1906, and Mr. McKim in September, 1909, leaving Mr. Mead the only survivor of the original firm. Mr. Mead is a fellow of the American Institute of Architects; was president of the New York chapter in 1907-08; is a member of the Academy of Arts and Letters; an academician of the National Academy of Design, and has been president of the American Academy in Rome since 1909. He has received the degree of Master of Sciences from the Norwich University in 1909, and the honorary degree of "LL.D." from Amherst College in 1902, and the gold Medal of Honor of the Academy of Arts and Letters "for distinguished service in the creation of original work in architecture" in 1913.

The premise that externals often conceal character does not apply to Mr. Mead. His kindness and courtesy are constantly apparent, and a very just comprehension of the relative value of things is accompanied by a charitable judgment which often softens the edge of his occasional condemnation. The cumulative refinements of design and the coruscations of genius of his former associates would have failed of their full success if deprived of the permament background of his good sense, his talents for sound planning, and for the accommodation of facts to fancies. It is the method of attack, based on these fundamentals, which has produced the great architecture of the world, and the results he has attained are comparable with those of his predecessors.

His modesty would probably make him disclaim any eulogistic remarks made in regard to him; nevertheless it is a satisfaction to state his eminent position in the profession of architecture and to call attention to the beneficial influence he has had upon American work. — *R. A.*

THOMAS HASTINGS

THOMAS HASTINGS was born in 1860, the son of the Rev. Thomas Hastings, an eminent Presbyterian divine, who was for years the president of the Union Theological Seminary in New York. His mother was a Miss de Groot, an American of Dutch and French parentage.

He received his professional education at the Ecole des Beaux Arts, studying in the atelier of M. Jules André, and took the full course in the Department of Architecture. Mr. Hastings has had many honors conferred upon him for his eminence in his profession. He is a chevalier of the Legion of Honor, decorated by the French Government, a director of the Museum of French Art, a corresponding member of the Royal Vienna Association of Architects, an academician of the National Academy of Design, a member of the Federal Commission of Fine Arts in Washington, a member of the American Academy of Arts and Letters, chairman of the Lincoln Highway Commission, a fellow and director of the American Institute of Architects, and has been president of the Architectural League. In 1884 he formed a partnership with the late John M. Carrère.

To appreciate the varied work of Mr. Hastings, from his first burst of exuberance in the Ponce de Leon Hotel to the restraint of the Frick house in New York, there must be an understanding of the sensitive qualities of his mind to the subtleties of expression, the modulations of composition, the pleasure in delicate detail, and even the delights of fantasy. From whatever source he gleans an inspiration, whether it be from Spain or from his beloved France, he penetrates the spirit of his chosen example and saturates himself with its character before he translates it into a new creation which has become a part of himself. His choice is that of a classicist who is eclectic within a self-imposed range which seldom is sympathetic with the Gothic spirit. That this is the case is natural; for his mind, though alert in fancy, seeks expression in formulated terms, in intellectual conventions, produced from serious study. He can better endure enthusiasm controlled by precedent than exuberance breaking a path to new vistas. Therefore his work manifests not only the good taste of his appreciation, but also that of training. Whether it be broad and simple, or decorative and complex, a refinement of line and of surface, of arrangement and of light and of shade, all give evidence of the careful study it has received. — *C. H. W.*

CHARLES A. PLATT

CHARLES A. PLATT, who was born in New York in 1861, is an original figure in American architecture. The canonical practice in this country which imposes upon every young draftsman a certain amount of office training, under some senior of established repute, is contradicted by his career. He did not begin life at the drafting board and he knew no office until he organized one, for he did not need either of them in his formative period. He began, instead, by painting and etching. When he went to Paris, in 1882, to study at Julian's under Boulanger and Lefebvre, and for some years thereafter, he seemed destined to make pictures alone. They were landscapes, chiefly, and they had the merits that endure, being truthful, beautiful, and full of personality. With such traits, and an inborn faculty for acquiring almost any technique, it was a simple matter to unlock the doors of other arts. Wandering in Italy he fell under the spell of the formal garden. He wrote a book about it and proceeded to design gardens himself. By this time the impulse to design buildings also, which had long been stirring in him, came irresistibly and as a matter of course to the surface. He became an architect as he had become a painter, out of a creative inspiration, and the outstanding precious fact resulting therefrom is that his buildings have style.

This it is that fixes his rank and explains his constantly growing influence. Appreciation of his first buildings must take account of their indebtedness to the Italian villa, but even at this point the derivative factors in a design of his are of a very subtle sort, and as the chronological sequence develops it very soon discloses the artist's essential independence of his Renaissance models. The facade into which he may introduce a Florentine note is expressive of a plan based upon the daily needs of an American household. And his Italianism, in fact, is at bottom nothing more than a love of simplicity, of pure line, of rhythmic proportion. For some years these predilections were illustrated altogether in the solution of a single problem, the country house. More recently a large apartment house in New York and office buildings there and elsewhere have engaged his attention. In these fields, too, he has affirmed his salient qualities of taste and beauty. At present he is preparing the plans for the Freer Museum at Washington, a monument of unique significance inasmuch as it is to house a single collection and to express a particular idea. The drawings foreshadow a structure of rare interest. It will be perfectly adapted to the everyday working requirements of a museum and it will be a thing lovely to look upon, light and graceful in style, yet with the due reposefulness and dignity of a public building. The fusion of practical and æsthetic issues is characteristic. It supplies the key to Platt's genius as an architect.—*X. X.*

FRANK MILES DAY

THE completion of the Art Club in 1887 on Broad street, Philadelphia, was the beginning of Frank Miles Day's career as an architect. Born in Philadelphia in 1861, after graduating at the University of Pennsylvania in 1883, he studied at South Kensington and was admitted as a student at the Royal Academy, London. His chief architectural education, however, was derived from several periods of travel-study in Europe. Returning to Philadelphia in 1886, where he soon opened an office, the above named clubhouse was his initial performance. Then it was that the public noted the arrival of an able designer, while the local circle of architects and their assistants witnessed another telling personality in that of Mr. Day joined to the brilliant group of Wilson Eyre, Walter Cope, and John Stewardson, all of whom were destined to work much good for the profession in their community. In 1892 Mr. Day joined in a partnership with his brother, H. Kent Day. In 1911 Charles Z. Klauder was admitted to partnership, and with the retirement of H. Kent Day in 1912 the firm became Day & Klauder.

Mr. Day follows an unswerving path toward the best in architecture. Time and study he lavishes unstintingly upon pure design, and in this task his quick discrimination discovers the good as unfailingly as his uncommon critical faculty discards the poor and commonplace.

But Mr. Day's talents are many sided. No one has a clearer and more just perception of the proper relations that should exist between architect, owner, and contractor. His mind assumes an almost legal cast when the execution of his buildings is to be begun, and the business methods of his office have largely contributed to that standard practice which fair minded men to-day accept and are following in the business of erecting honest buildings. One of Mr. Day's absorbing interests is that of literature; and in a country such as this, where so few professional men are possessed of literary tastes and ability, it has been indeed fortunate for the important field of architectural letters that Mr. Day has lent it much willing and effective service. Nor does he excel in the effective presentation of subjects by means of writing only. He is one of the ablest public speakers that the profession in this country has ever had. In addition to his regular lecturing to students of the Pennsylvania Academy of the Fine Arts, the universities of Pennsylvania and Harvard, and the cares of his large and increasing practice, he finds time to speak often in the interest of public spirited movements and civic betterment. He is an authority on competition programs, and probably has served on more architectural juries than any other practising architect. Mr. Day has twice been president of the Institute. He is identified with numerous learned societies both here and abroad, and is now supervising architect to at least ten prominent colleges or universities in this country.—*H. C. W.*

PLATE DESCRIPTION.

West Park Presbyterian Church, New York, N.Y., Carrère & Hastings, Architects, Plates 168–170.

The brickwork of this church is of a buff color and laid in Flemish bond with a light colored mortar. The exterior trim is of buff Indiana limestone with a fine rubbed finish. The structural part is entirely of steel frame, fireproofed throughout; the floors and flat roofs are of concrete slabs, while the pitched roofs are of book tile covered with copper. The auditorium is decorated with ornamental plaster work painted a cream color, enameled. The ventilation is by a plenum system and the heating by an indirect system. The large windows are of metal sash with cathedral glass. The main stairs have marble treads with ornamental wrought iron rails. The cost of the building complete, including furniture and fittings, was about 40 cents a cubic foot, and the capacity of the main auditorium and gallery is 800.

St. James' Presbyterian Church, New York, N. Y., Ludlow & Peabody, Architects, Plate 171.

This church, which serves a negro parish, has a very complete equipment for social work for filling the requirements of the modern church, which must not only hold services for worship, but also classes for cultural work, lectures, social gatherings, and gymnasium classes. Besides the housing of these activities as shown on the plans, the roof of the church will also be utilized as a recreation garden for children and also for open air services during the warm weather of the summer.

The materials employed are red brick laid with wide light joints with stone and terra cotta trim. The auditorium is decorated in white and mahogany and has a seating capacity of 450 persons. The interior shows a barrel vaulted ceiling, supported on rows of Corinthian columns which form the side aisles.

Chapel of the Dominican Sisters of St. Agnes, Sparkill, N. Y., Davis, McGrath & Kiessling, Architects, Plate 172.

The exterior of this church, while simple in its design, is enhanced by the interest of the brickwork, particularly the use made of pattern in the gable of the main façade. The brick is laid with a wide, light colored flush joint and the trimmings are of stone. The seating capacity is about 650.

All Saints' Episcopal Church and St. John's Parish Hall, West Newbury, Mass., Clark & Russell, Architects, Plates 173, 174.

The brickwork of this church is laid with a light colored wide flush joint and the trimmings are entirely of manufactured cement stone. The roof is of extra heavy slate laid in graduated widths. The interior walls are plastered and the ceiling shows the open timber work which is stained a dark brown. The floors of the aisles and the vestibule are of black and white marble, while the floor of the chancel is of terrazzo. There are accommodations for about 150 persons and the cost complete, including furniture, was about $25,000.

The Parish Hall is of stucco and brick with some half-timber work in the gables. The water table is of bricks laid on a slant. The hall seats about 250 people. The total cost of the building was approximately $15,000.

St. Mark's Roman Catholic Church, Dorchester, Mass., Brigham, Coveney & Bisbee, Architects, Plate 175.

The building consists of a central nave with clerestory carried on an arcade and covered by a pitched roof with open timber construction and of side aisles covered with pent roofs.

The design is a free rendering of the last phase of Gothic in England, called Perpendicular. The treatment is in general simple with a certain amount of richness in the window treatment, especially in those in the sanctuary, and at the entrance.

The exterior walls of this church are of a dark red rough texture brick laid with wide flush joints. The trimmings and tracery are of gray artificial stone and the roofs of green slate laid in courses of graduated widths. The walls of the interior are mostly of plaster, decorated in the nave and aisles and in the sanctuary with painted decorations. The woodwork of the interior and the furniture throughout are of slashed oak, stained a deep rich brown. The seating capacity of the upper church is 1,200, including the space in the gallery, and that of the lower church is approximately the same. The cost of the building was approximately 14½ cents a cubic foot.

St. Columba's Roman Catholic Church, Johnstown, Pa., John T. Comes & J. E. Kauzor, Associate Architects, Plate 176.

Interesting use of brick pattern work with stone and terra cotta trimmings and stucco panels has been made in the design of the exterior of this church. The roofs and copings are of Spanish tile. The entrance motive with carved figures and decoration is of stone. The columns of the interior are of stone with tile inserts on the capitals and plaster walls above. A touch of color is given by the brick lining of the arches. The floors of the aisles are of tile, while the floor of the chancel is terrazzo. The reredos is of carved stone. The seating capacity is about 450.

Baptist Memorial Church, Twickenham, England, Ingall, Bridgewater & Porter, Architects, Plates 177, 178.

The free adaptation of Gothic motives in this building is typical of the modern church work of England. The brickwork, both on the exterior and the interior, is all of hand made bricks in mixed colors. The total cost of the building was approximately $19,000.

All Saints' Church, Goodmayes, Essex, England, P. K. Allen, Architect, Plates 179, 180.

On the exterior the walls are of red brick with Portland stone trimmings, the roof being covered with silver gray slates. On the interior the walls are plastered, while brick arches rest on the stone piers. The roof is of Oregon pine left to tone down naturally. The seating capacity is between 700 and 800, while the cost of the building was about $47,000.

EDITORIAL COMMENT AND NOTES FOR THE MONTH

THE composition of the library of an architect is a matter which deserves considerable thought and attention. With the highly developed state of photography and printing has come a vast production of works dealing with architecture, picturing monuments from all parts of the world, and flooding the architect with material from which to choose.

For various reasons the average library must be limited. The very nature of architectural books which demands that they be illustrated completely often makes their cost high so that only a few may be acquired. The average architect of to-day, moreover, has little time to devote to matters other than those pertaining in some manner, more or less direct, to his practice. There is a great amount of detail in the office to be attended to, and clients of the present and future are likely to consume a large proportion of the remaining time. The tendency then of the general architect is to limit his library to those works from which the most immediate benefit may be derived, that is, to purchase principally those books pertaining to design or construction—books from which "inspiration" of a direct character may be obtained.

Too frequently the history of architecture is almost entirely slighted or forgotten. The architect as a man of general culture should have a knowledge of architectural history as a part of his special and particular information. But, apart from this view, the study of history from the aspect of cause and effect, of environment and production, the study of architectural forms as an indication of historical life becomes a source of material of immense value. Few men in the profession are really satisfied to be merely imitative, slavishly following precedent without thought concerning new conditions of living and new requirements of building. In fact, true architecture in the broadest sense of the word is the exact opposite — it is only that work in which a distinct forward step is made and in which the life of its time is reflected.

The historical monuments are such works, and they exist in memory because of this very fact. The study of architectural history then, from this point of view, will not only lead to a better and more sympathetic understanding of historical forms and monuments, but will also stimulate and offer inspiration to the man striving to-day to express himself and his period in the art of building.

IT IS from this point of view that A. L. Frothingham, late professor of archæology and the history of art at Princeton University, has written the two volumes which complete the monumental work, "A History of Architecture," started by Russell Sturgis, and of which the first two volumes were practically completed before his death. The first two volumes, however, took the survey only to the end of the period of the Romanesque, and Mr. Frothingham has finished it with a consideration of the Gothic and Renaissance. These two periods are those of closest similarity to our own modern age and from which the greatest amount of architectural inspiration has been derived.

The author calls the Gothic period a period of *dynamic* architecture as compared to the *static* architecture of the Renaissance. It was a period of development of architecture as compared with a period of the development of decoration. Because of this more subtle quality of the Gothic it cannot be doubted but that it marks the greater architectural advance. It is because of this less obvious quality of structural beauty that the Gothic is less easily copied by the modern architect, no one of which has yet fully mastered the laws governing the construction. The Renaissance is a simple matter in comparison because of its complete reliance on external beauty and proportion.

It is by realizing the conditions under which these styles were evolved that they become of value to us as architects of to-day, and it is this point which Mr. Frothingham has made the foundation of his text.

THE New York State Board for the Registration of Architects announces a competition for the purpose of securing a design for the certificate which will be issued to all persons entitled to practise architecture in the state of New York. This competition is open to all architects, draftsmen, or other designers resident or doing work in New York City. The designs submitted must be in the hands of D. Everett Waid, 1 Madison avenue, on or before Jan. 25, 1916, and will be judged by a jury composed of William R. Mead, Henry Bacon, Charles Platt, and S. B. P. Trowbridge of New York City, George Cary of Buffalo, Frank H. Quinby of Brooklyn, and J. Foster Warner of Rochester. The prizes are: $200 for the design placed first, $150 for the second, $100 for the third, and $50 for the fourth. Information concerning details of the competition may be obtained from Mr. Waid.

AT the annual meeting of the American Institute of Architects held in Washington, D. C., on December 1, 2, and 3, the following officers were elected: President, John Lawrence Mauran, St. Louis; 1st Vice-President, C. Grant La Farge, New York City; 2d Vice-President, Milton B. Medary, Jr., Philadelphia; Secretary, Burt L. Fenner, New York City; Treasurer, D. Everett Waid, New York City.

The new members of the Board of Directors elected for three years are: Edwin H. Brown of Minneapolis; Horace Wells Sellors of Philadelphia; Ben J. Lubschez of Kansas City.

THE BRICKBUILDER

AN ARCHITECTURAL MONTHLY

VOL. 24

DECEMBER
1915

NO. 12

PUBLISHED BY
ROGERS AND MANSON COMPANY
BOSTON MASS.

TERRA COTTA *and the* SMALL COMMERCIAL BUILDING

Building at left
Hanan Shoe Store, Philadelphia, Pa.
Bissell & Sinkler, Architects

Building in center
Huyler Candy Store, Philadelphia, Pa.
Harris & Richards, Architects

Building at right
Bakery and Lunch Room, Philadelphia, Pa.
Charles W. Denny, Architect

THE architect who is called upon to design a small commercial building with a narrow frontage is immediately beset with the necessity of choosing some material for its street facade which will create distinction and enable it to stand out from surrounding structures. The three small buildings above show how effectively

KETCHAM TERRA COTTA

"The material of dependable quality"

meets the difficulty. Terra cotta has a clean, bright surface, which can be easily kept so; it combines well with large glass areas and can be readily produced in any form to meet architectural requirements, and its use will further be found to serve every mercantile requirement.

O. W. KETCHAM TERRA COTTA WORKS

MASTER BUILDERS' EXCHANGE, PHILADELPHIA, PA.

BRANCH OFFICES

NEW YORK, 1170 Broadway
BOSTON, George Kendall, 4 P. O. Square
WASHINGTON, Home Life Building
BALTIMORE, Baltimore American Bldg.

ARCHITECTURAL TERRA COTTA WORKS AT CRUM LYNNE, PA.

INDEX OF ADVERTISING ANNOVNCEMENTS

FORDYCE BATH HOUSE, Hot Springs, Ark. Mann & Stern, Architects

THE Architects of the Fordyce Bath House have, in their treatment of the wall surface, caught the spirit of a structure of semi-public character. Trimmed with ornamental Terra Cotta to match in color-tone the brickwork, the body of the wall is laid in Hy-tex No. 507, of a delicate, smooth, cream-colored tint, accentuated by dark headers to bring out the pattern. No effect could be happier for the purpose to be expressed.

Hy-tex

The Standard of Quality in Brick

THIS building will illustrate our capacity to co-operate fully with the architect in his artistic aims. From our twenty-two plants and fourteen offices, distributed over the country, we are able to offer both quality of material and quality of service in the widest possible range of color and texture in Face Brick. No matter what your purpose, we have just the brick you want. Send for our new "Hy-tex Brick Catalogue" for your files, reprint from Sweet's for 1915, pages 110-21.

HYDRAULIC-PRESS BRICK COMPANY

SAINT LOUIS

BRANCH OFFICES AND EXHIBIT ROOMS: Baltimore, Chicago, Cleveland, Davenport, Du Bois, Pa., Indianapolis, Kansas City, Minneapolis, New York City, Omaha, Philadelphia, Toledo, Washington, D. C.

THE BRICKBUILDER

VOLUME XXIV NUMBER 12

CONTENTS for DECEMBER 1915

PLATE ILLUSTRATIONS

LETTERPRESS

Published Monthly by
ROGERS AND MANSON COMPANY
Boston, Mass.

Yearly Subscription, payable in advance, U. S. A., Insular Possessions and Cuba $5.00
Canada $5.50 Foreign Countries in the Postal Union 6.00
Single Copies 50 cents All Copies Mailed Flat

Trade Supplied by the American News Company and its Branches. Entered as Second Class Matter, March 12, 1892, at the Post Office at Boston, Mass.

Architects: Bonfoey and Elliott, Tampa, Florida
General Contractors: McGucken and Hyer, Tampa, Florida
Roofers: Eng'e Roofing and Art Metal Works, Tampa, Florida

On Tampa's New City Hall—

TAMPA is building this fine, new city hall at a cost of several hundred thousand dollars. The plans were open to competition and this interesting design was the winner. The size and nature of the contract naturally attracted the ablest architects, and as the first-class architects of the country appreciate the superiority of Barrett Specification Roofs, this type was selected to cover the Tampa City Hall.

This is a cycle of reasoning which has become increasingly familiar during the last few years. If it is a large or first-class building, it attracts first-class architects and engineers, and the preference of such men is almost always for Barrett Specification Roofs.

That is why you can select at random any large, important, public or commercial building anywhere in the United States that has been built within the past ten years and find, almost invariably, that it has a Barrett Specification Roof.

Such a roof is the lowest priced of all permanent roofs. It requires no care or maintenance expense and is good for upwards of twenty years without repairs. It takes the base rate of fire insurance and is approved by the Underwriters' Laboratories.

You can have a roof exactly like that on the Tampa City Hall by writing The Barrett Specification in full into your building plans.

Hydronon

The Damp-proofing Paint

Especially recommended for use above the ground level on the interior of stone, brick or concrete walls to exclude dampness.

Has superior covering capacity and is vastly superior to other paints in its permanence and resistance to dampness. Booklet on request.

Tar-Rok Sub Floors

This construction provides the most suitable surface on which to bed plank (without the use of sleepers) where a wooden lower floor is desired in factory, machine shop, store house, etc., effecting a maximum of strength, rigidity and protection against dry rot, decay or fire, at a nominal cost. Booklet on request.

A copy of The Barrett Specification, with roofing diagrams, free on request

BARRETT MANUFACTURING COMPANY

New York Chicago Philadelphia Boston St. Louis Cleveland Cincinnati Pittsburgh
Detroit Birmingham Kansas City Minneapolis Salt Lake City Seattle Peoria
THE PATERSON MFG. CO., Limited: Montreal Toronto Winnipeg Vancouver
St. John, N. B. Halifax, N. S. Sydney, N. S.

Piedmont Hotel

Third & Fourth National Banks

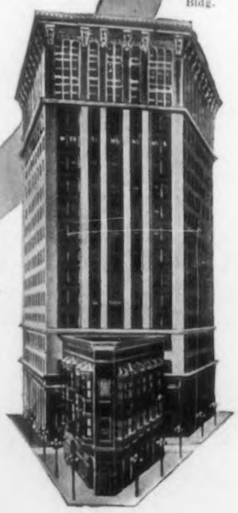
ATLANTA
Picks White Lead, Too

BUILDINGS throughout the country that house big business are almost without exception decorated with white lead. It is the favorite paint in New York, in Chicago, in Saint Louis, in Cleveland and — Atlanta swears by white lead, too. At least ten of its largest office buildings are kept in ship-shape state from cellar to garret by white lead, hand-mixed to exactly meet every condition. Each painting problem was worked out independently of the others. Invariably the paint chosen was the same —

Dutch Boy White Lead

The unanimity of selection speaks for itself. There are good reasons for uniting on one white lead — that guaranteed by the Dutch Boy trade-mark. Paint made of Dutch Boy white lead excels in durability, beauty of finish and adaptability. It is washable. A big factor in its favor is low maintenance cost. Any tint, texture and finish can be had.

Candler Bldg.



Empire Bldg.

These Ten Atlanta Buildings Are Dutch Boy White Leaded

KIMBALL HOTEL
ATLANTA NATIONAL BANK BUILDING
FOURTH NATIONAL BANK BUILDING
EMPIRE LIFE BUILDING
EMPIRE BUILDING
THIRD NATIONAL BANK BUILDING
GRANT BUILDING
PIEDMONT HOTEL
HEALY BUILDING
CANDLER BUILDING

NATIONAL LEAD COMPANY

Manufacturers also of Dutch Boy Red Lead-in-Oil and Dutch Boy Linseed Oil

New York Boston Buffalo Chicago Cincinnati
Cleveland St. Louis San Francisco

Philadelphia (John T. Lewis & Bros. Company)
Pittsburgh (National Lead & Oil Company)

First National Bank Building, Milwaukee, Wis. Graham, Burnham & Co., Architects. J-M Built-Up Asbestos Roofing.

JOHNS-MANVILLE SERVICE TO THE ARCHITECT

SOME one has said "business is comparative." A business either gains or loses by comparison with another, and whether it is judged better or worse is largely a matter of organization, equipment and experience.

Forty-eight J-M organizations in as many North American cities make J-M Service a "next door neighbor" to every architect throughout the whole continent.

J-M Service is equipped with men who are always ready to co-operate with you with practical operative and constructive suggestions gleaned from our half-century of experience and responsibility.

J-M Built-up Asbestos Roofing—the roofing that will strike the word "paint" from the specification sheet

This roofing has made the paint pot a foreign element on the roofs of many factories, mills and warehouses throughout the country—everywhere, in every climate. It is the *material* in this roofing that makes it water-proof, weather-proof, fire resistant and non-corrosive without painting.

There is nothing in J-M Built-up to melt or run in the sun—nothing to crack or break under severe cold—nothing to dry up or rot out under varying atmospheric conditions.

When you once investigate this roofing you will be convinced that it is the best for your client. Write to the nearest J-M Branch to-day and get the booklet that discusses all J-M Roofings and J-M Roof Registration.

J-M Asbestos Built-up Roofing is examined, approved and labeled by the Underwriters' Laboratories under the direction of the National Board of Fire Underwriters. It is given Class "A" rating when applied over non-combustible roof decks having inclines not exceeding 3 inches to the foot, and secures Class "B" rating when applied over non-combustible roof decks having inclines not exceeding 6 inches to the foot.

Railway Exchange Building, St. Louis, Mo. Mauran, Russell & Crowell, Architects.

H. W. JOHNS-MANVILLE COMPANY

Akron	Boston	Columbus	Duluth	Kansas City	Minneapolis	Philadelphia	St. Paul	Toledo
Albany	Buffalo	Dallas	Galveston	Los Angeles	Newark	Pittsburgh	Salt Lake City	Washington
Atlanta	Chicago	Dayton	Houghton	Louisville	New Orleans	Portland	San Francisco	Wilkes-Barre
Baltimore	Cincinnati	Denver	Houston	Memphis	New York	Rochester	Seattle	Youngstown
Birmingham	Cleveland	Detroit	Indianapolis	Milwaukee	Omaha	St. Louis	Syracuse	

THE CANADIAN H. W. JOHNS-MANVILLE CO., Ltd., Toronto Winnipeg Montreal Vancouver

Special Design Grilles and Radiator Enclosures

This photograph shows an example of exposed radiator covered by ornamental screen.

Send for Catalog 66A, showing eighty of these special Grille Designs suited to various orders of decoration — Colonial, Classic, Empire, Louis XIII, XIV, XV, XVI and Oriental.

TUTTLE & BAILEY MFG. CO.

ESTABLISHED 1846

52 Vanderbilt Avenue, New York

CHICAGO BOSTON CLEVELAND
BRIDGEBURG, ONTARIO

"WATCH YOUR LINE"

December —— January —— February

Are the months to test the insulation on your Underground Steam and Hot Water Pipes.

Read what the President of a large Brewery says:

"This pipe is laid three feet under the surface, and with the old method of protection gave us a great deal of trouble in winter time by thawing the snow above it even in the coldest of weather, thereby always destroying the sleigh road in our busy brewery yard, on which sleighing we have to depend generally for about three months of the year.

"The application of the Ric-wiL Covering has completely done away with the trouble, so that now no signs in the snow are discovered to even tell us where the pipe is located."

If you specify "Ric-wiL MethoD," you will have No Trouble, No Loss, and complete Satisfaction for years to come.

The Ric-wiL Underground Pipe Covering Co.

666 NEW ENGLAND BLDG. CLEVELAND, O.

Tubular Boiler Efficiency

Wrought Plate Tubular Boiler Shell

The Boiler Shell of a **Gorton Self-Feeding Boiler** is directly over the fire, where it gets the full benefit of all the heat generated from the coal. The tubes are placed as thickly in the Boiler Shell as proper construction will permit, thus subdividing the water space and enabling the heat to act most effectually.

The products of combustion enter the tubes at the highest temperature and passing up through them are returned down around the Boiler Shell before going to the smoke pipe. *See pages 3, 4, 8, 11, and 13 of Catalog No. 88.*

OUR NEW NO. 88 CATALOG IS READY — WILL BE SENT UPON REQUEST

Gorton & Lidgerwood Co.

96 Liberty Street, New York

All Gorton Self-Feeding Boilers built to the "A. S. M. E. Standard"

Better Valves

Detroit Packless Radiator Valves were designed to meet the demand for better valves.

They have proved to be better in every way — they are absolutely tight and will stay tight — they do not leak around the stem nor need repacking.

The installation of Detroit Packless Valves means economy and permanent satisfaction for the building owner.

Detroit Packless Radiator Valves

are being specified in prominent buildings throughout the country, because they meet that all-important requirement of maximum utility combined with beauty of line and finish.

The first cost is the whole cost — there is no occasion for having a man spend most of his time keeping them in condition, and there is no danger of their becoming unsightly from rusty, dirty water.

Their lines are substantial, symmetrical and pleasing.

The metal surfaces have a smooth, satin finish that will not deteriorate — the handles are mahogany finish, large and nicely proportioned. In fact, Detroit Packless Valves are finished in a manner to harmonize with the most beautiful surroundings.

And the line is complete — angle, corner, globe, gate — in all sizes for every kind of installation on steam and hot-water systems.

Illustrated Booklet B-44 gladly sent on request.

DETROIT LUBRICATOR COMPANY
DETROIT, U.S.A.
CANADIAN DETROIT LUBRICATOR COMPANY LTD. WALKERVILLE, ONTARIO, CANADA

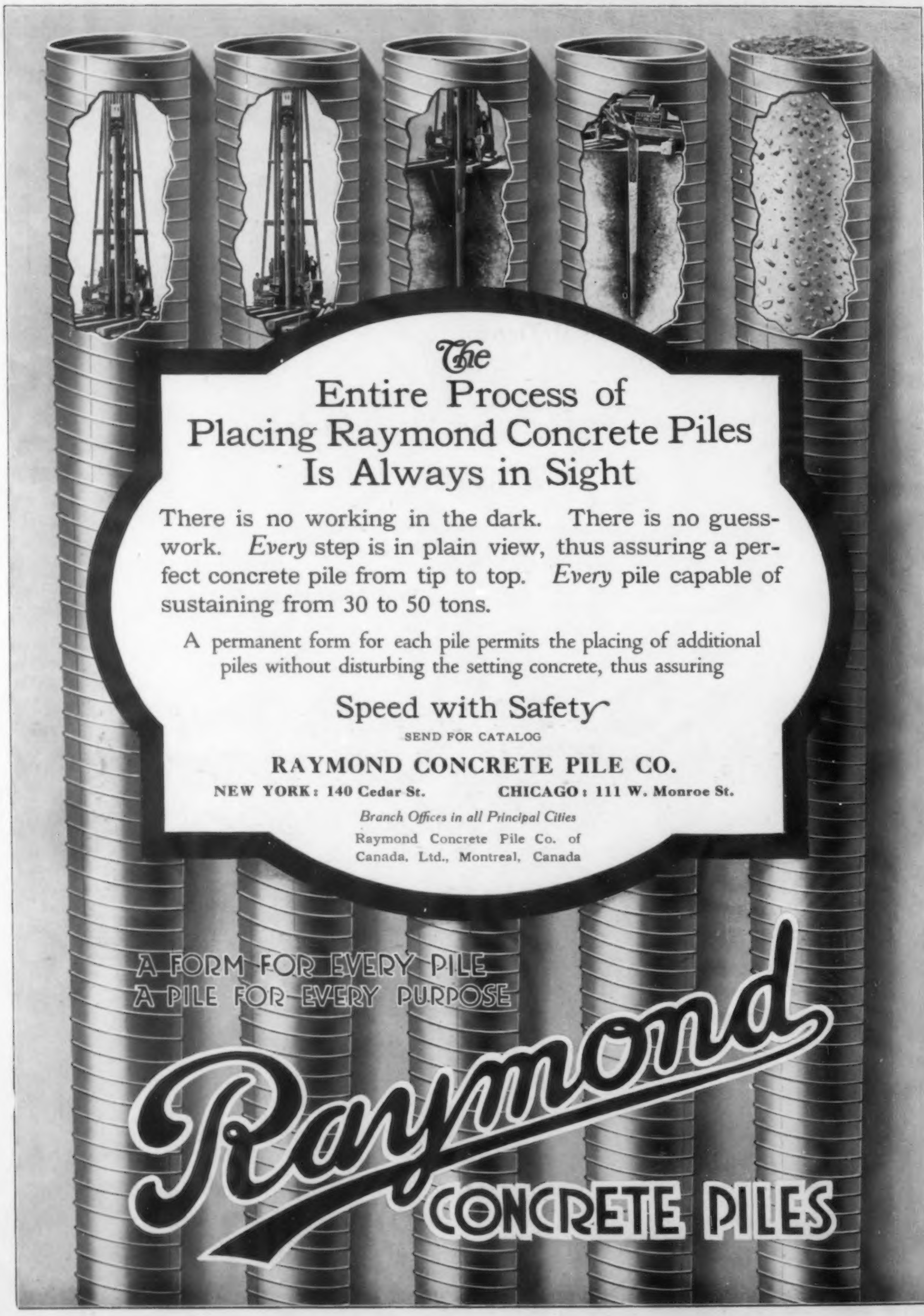
Makers of the Stewart Carburetor

"A Radiator Valve that *can't* leak"

Equipped with "Genuine Detroit" Packless Radiator Valves

Equitable Building, New York

Architect ERNEST R. GRAHAM — Heating Contractors THOMPSON-STARRETT CO.


The
Entire Process of
Placing Raymond Concrete Piles
Is Always in Sight
There is no working in the dark. There is no guesswork. *Every* step is in plain view, thus assuring a perfect concrete pile from tip to top. *Every* pile capable of sustaining from 30 to 50 tons.
A permanent form for each pile permits the placing of additional piles without disturbing the setting concrete, thus assuring
Speed with Safety
SEND FOR CATALOG
RAYMOND CONCRETE PILE CO.
NEW YORK: 140 Cedar St. CHICAGO: 111 W. Monroe St.
Branch Offices in all Principal Cities
Raymond Concrete Pile Co. of Canada, Ltd., Montreal, Canada
A FORM FOR EVERY PILE
A PILE FOR EVERY PURPOSE
Raymond
CONCRETE PILES

Sanitary Sound-Deadening is Cheaper

Apartment House, sound-deadened with Hydrex-SANIFLOR Sound-Deadening Felt. A. P. Clark, Jr., Architect, Washington, D. C.

Than any Risk of Illness

Floors in apartment houses, residences, hotels, etc., should never be sound-deadened with materials containing grass or cattle-hair. Such materials not only harbor mice and vermin, but also, because of their very nature, become day by day more repellent, and in their decomposition give off carbonic gas.

HYDREX-SANIFLOR
Sound-Deadening Felt

For efficient and hygienic results use Hydrex-SANIFLOR Sound-Deadening Felt. It is a thick, soft, cushion-like felt with a flexible, waterproof coating on both surfaces, which hermetically seals in the felt and makes it non-absorbent, verminproof and absolutely sanitary. Mice, bugs or moths cannot enter the felt; gnawing causes the coating to stick to the teeth.

HYDREX PAINT
Unexcelled for dampproofing interior surface of exterior brick walls and hollow terra cotta tile walls to be stuccoed. Forms a heavy, tenacious, impervious coating to which plaster and stucco firmly bond.

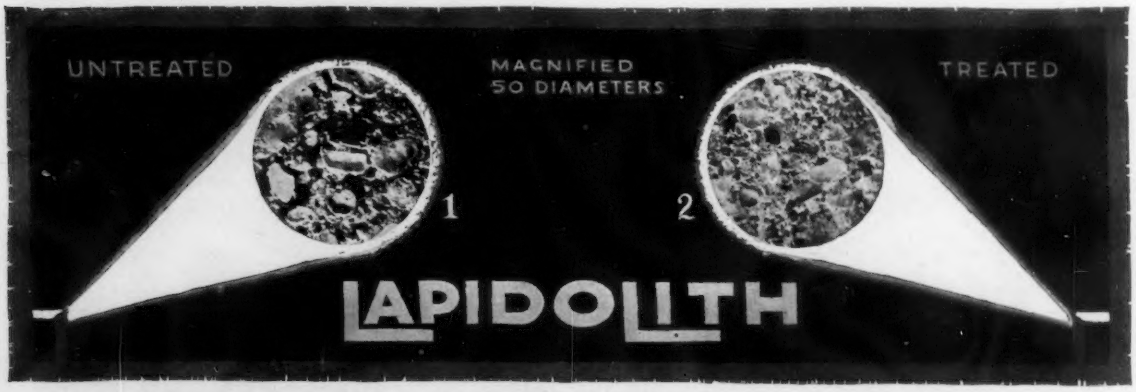
THE HYDREX FELT & ENGINEERING CO.

120 LIBERTY STREET, NEW YORK

People's Gas Building	K. C. Life Building	320 Market Street	Factories
Chicago	Kansas City, Mo.	San Francisco	Rahway, N. J.

Also makers of Hydrex-NOVENTO Waterproof Sheathing Paper, HYDREX Waterproofing Felt, HYDREX Compound, HYDREX Waterproof Canvas, Hydrex-PLUVINOX Roofings, etc.

Write for Pamphlet, "Sound Transmission in Buildings."



Lapidolith is the Liquid Chemical Hardener for Concrete Floors

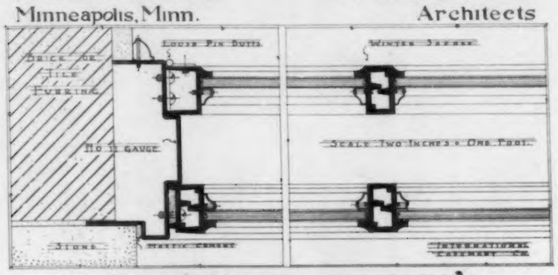
1. Micro photograph of untreated concrete, 1 — 2 mixture. 2. Micro photograph of treated concrete, 1 — 2 mixture.

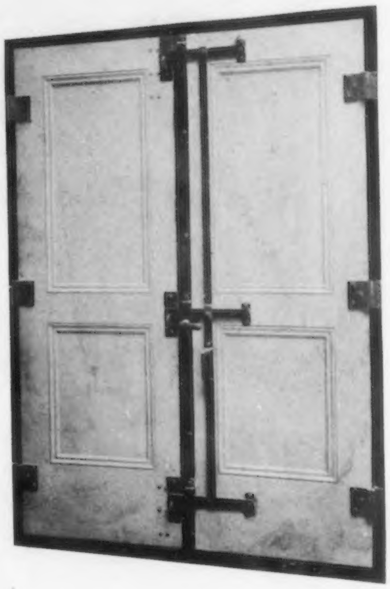
Note how the voids (black spots) that appear in No. 1 micro photograph are filled up in No. 2.
Lapidolith forms with the concrete matrix a hard, insoluble and wear resisting component.
It increases the binding power of the cement and prevents the sand and other aggregate from being rolled out of their bedding by the friction of walking and trucking.
Thus Lapidolith makes concrete floors dust-proof, wear-proof and water-proof for years.

The only hardener successfully used for years

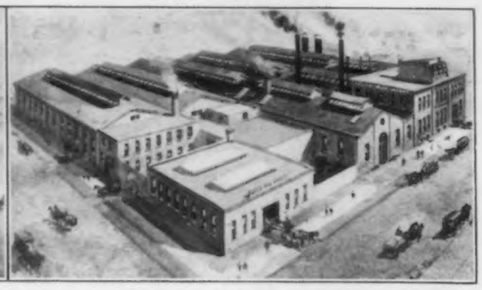
Prove it — send for sample bottle, Lapidolized concrete block and booklet of testimonials

L. SONNEBORN SONS, Inc., Dept. 4, 262 Pearl Street, New York City





Showing part of Hecla Works

HECLA IRON WORKS

Established 1876

Constructors and Makers of Bronze and Iron Work for Buildings

Office
118 North 11th Street

Works
North 10th to North 13th Streets

Brooklyn, New York City, New York


THE BEST ROOF FOR PUBLIC BUILDINGS

is a good Tin Roof — and this is equally true for residences and other classes of buildings. The Home for Aged Women, Boston, shown in illustration at left, was covered with MF Roofing Tin over forty years ago. The School Building at Jersey City was roofed with MF fifteen years ago.

SPECIFY COPPER STEEL OPEN HEARTH

ROOFING TIN

MF

32 POUNDS COATING
KEYSTONE
COPPER STEEL

Highest quality Roofing Tin manufactured — and *it lasts*. Demand roofing plates that bear the stamp "KEYSTONE COPPER STEEL" in addition to brand and weight of coating. It insures a roof of service and satisfaction. We also manufacture Apollo-Keystone Copper Steel Galvanized Sheets — unequaled for all forms of exposed sheet metal work. Send for booklet showing service tests.

American Sheet and Tin Plate Company

GENERAL OFFICES: Frick Building, PITTSBURGH, PA.

DISTRICT SALES OFFICES

Chicago Cincinnati Denver Detroit New Orleans New York Philadelphia Pittsburgh St. Louis

Export Representatives: UNITED STATES STEEL PRODUCTS COMPANY, New York City

Pacific Coast Representatives: UNITED STATES STEEL PRODUCTS COMPANY, San Francisco, Los Angeles, Portland, Seattle

Band reinforcement electro welded inside hinge and lock edge for hardware.
Welded reinforcement in rail.
Rail welded TO stile--NOT UPON IT.
Mouldings neatly mitered and welded NOT COPED.
Panels inserted separately NOT PART OF STILE.
ZAHNER
Special Hollow Steel Doors, Jambs and Interior Trim for
Hospitals
and similar institutions in which the strictest sanitation is demanded.
Write for samples and full information
The "Gunn" Sanitary Jamb
One piece - eliminates bucks, grounds and lintels, prevents secretion of dirt.
Special sound deadening filler inserted in stile and rail.
Panel moulding made separately and permanently SNAPPED INTO PLACE--NO SCREWS.
Panels filled solid with fire resisting asbestos.
THE ZAHNER METAL SASH AND DOOR CO.
CANTON
Panel holder and mould clinch WELDED INTO stile and rail. Also forms additional stiffener.

POMEROY PROTECTION

THE idea of **Pomeroy** Protection is: first, to erect non-burning barriers in every path by which a fire might spread; second, to make those barriers so substantial, so durable, that they become a permanent part of the building — not mere makeshifts that must be repeatedly repaired and renewed. **Pomeroy** Protection means Permanent, Profitable Protection.

For Exterior Openings

POMEROY

Hollow Metal
Fire Retardant

WINDOWS

Made in 27 standard types, affording the architect a standardized, tested construction adapted to every class of building and to all personal preferences as to style and method of operation; the only window made by fire retardant specialists.

For Interior Subdivision

POMEROY

Hollow Metal
Fire Retardant

PARTITIONS

Standardized sectional construction, 7½ feet high, or full ceiling height; sanitary, indestructible, handsome in appearance, moderate in cost; made in panel-width units joined up by improved fasteners in a partition of extreme solidity.

SEND FOR THE NEW CIRCULARS

S. H. POMEROY COMPANY, Inc.

30 East 42nd Street **New York City**

"The Year on Every Length"

Byers Covenant with the Pipe User

THIS will be our covenant with the pipe user: The year of manufacture will be rolled every few feet apart on every length of Byers pipe, as a guarantee of its durability. Thus, pipe made during the remainder of this year will be marked: BYERS '15.

"The Year on Every Length" expresses our faith in Byers pipe,—as it was, as it is, and as it will be.

"The Year on Every Length" signifies our desire to be judged by the present and future performance of Byers pipe, as much as by its splendid past service record.

"The Year on Every Length" is an open invitation to pipe users to watch and compare the service given by Byers pipe with that of iron and steel pipe of whatever make, brand or character.

"The Year on Every Length" will bring every observant pipe user a step nearer the final solution of the question: Which pipe is ultimately the cheapest?

And that is the very basis Byers wants to stand on.

We are equipped to furnish nipples made from Byers Genuine Wrought Iron Pipe in sizes from 1/8 up to 12 inches.

A·M·BYERS COMPANY
ESTABLISHED 1864
PITTSBURGH PA.

23 Sullivan Street, NEW YORK CITY
1 Sleeper Street, BOSTON, MASS.
720 Fulton Street, CHICAGO, ILL.

Distributors in all Jobbing Cities
Ask for Name of the Byers' Dealer in Your District

BYERS GENUINE WROUGHT IRON PIPE
FULL WEIGHT GUARANTEED

This Light "*Feels Right*" to the Eyes

It is mellow, glareless, uniform and evenly distributed—and is obtainable only with

BRASCOLITE
TRADE MARK
DIFFUSION PLUS REFLECTION
PATENTED

The shape and color of the reflector—the character and position of the bowl (all scientifically correct)—combine to produce a light that is handsome—comforting to the eyes—an aid to working efficiency—helps merchandise display—decreases current consumption—lowers maintenance cost.

No matter what your lighting problem, there is a type of Brascolite to solve it. Tell us what your requirements are—and our Engineering Department will help you. Make use of it.

On Your Request

We shall be pleased to send you complete catalog showing Brascolites adapted for Stores, Offices, Public Buildings, Churches, Restaurants, Theatres, etc. We will make Brascolites to match any detail and to architects' designs.

LUMINOUS UNIT COMPANY
ST. LOUIS, U. S. A.

New York—253 Broadway—Suite 608-9
Chicago—19 S. Fifth Avenue
San Francisco—883 Market Street
Los Angeles—1621 S. Grand Avenue
Boston—233 Old South Bldg.
Philadelphia—1021 Land Title Bldg.

WICHITA (KANSAS) UNION STATION
EQUIPPED WITH BRASCOLITES

"RELIANCE"

A Word to the "Why's" That's **EFFICIENT**

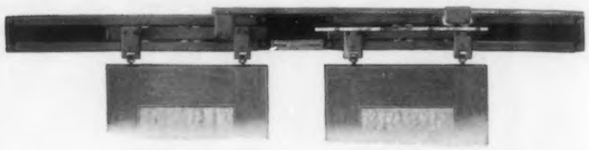
Why do Reliance Ball Bearing Door Hangers contribute to economy of building maintenance? Because they operate quickly, dependably and economically.

Why quickly? Because Steel Ball Bearings enable the heaviest door to move with least friction.

Why dependably? Because the principle of construction eliminates complicated mechanism and provides positive action.

Why economically? Because high carbon steel used in their construction provides unlimited service, trouble-free service, with resultant saving on repairs, adjustment or replacement.

AND HERE'S ONE TYPE



SEND FOR CATALOG SHOWING OTHERS

RELIANCE BALL BEARING DOOR HANGER COMPANY
30 EAST 42d STREET NEW YORK

The Decorators Supply Company, Chicago

WE DESIGN
AND
MANUFACTURE
COMPOSITION
ELECTRIC
LIGHTING
FIXTURES

WE EXECUTE ANY SPECIAL DESIGN

FACTORIES AND SHOWROOMS
LOCATED AT
ARCHER AVE. COR. LEO AND LIME STS.

CATALOG SENT TO ARCHITECTS ONLY

The proper place of

zinc

in paint is not too small a matter for the architect who considers good paint essential to good construction. "*One of Your Problems*" is a book we would like to send you.

The New Jersey Zinc Company
Room 502, 55 Wall Street, New York

Specify "CREO-DIPT" STAINED SHINGLES
FOR ROOFS AND SIDE WALLS

They will save your client continual roofing and painting expense and give any desired combination of soft color shades that last a lifetime. One never tires of "CREO-DIPT" colors.

Architect, A. N. Oviatt
Cleveland

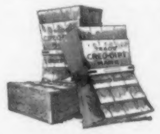
for Mr.
A. C. Dutton

"CREO-DIPT" STAINED SHINGLES

17 Grades **16, 18, 24-inch** **30 Different Colors**

We select best cedar shingles, preserve them by our special process in creosote, and stain them any color desired. They last twice as long as brush-coated shingles or natural wood. They do not curl up or blow off. Save muss, uneven colors and waste of staining-on-the-job.

Write to-day for colors on wood and *your* book of "CREO-DIPT" Homes in all parts of the country. Get your lumber dealer to carry in stock standard shades of our greens, reds and browns.



Standard Stained Shingle Company
1025 Oliver St., N. Tonawanda, N. Y.
Factory in Chicago for Western Trade

They Come Stained, Ready-to-Lay Without Waste

Devoe Oil Wood Stains

are pigment stains, not aniline. They are strictly unfading. They penetrate deeply, but they do not raise the grain of the wood.

SET OF OAK PANELS
Showing Twelve Colors, on Request

Architects not familiar with services rendered by our Building Construction Department are invited to write for particulars, or a representative will call.

Building Construction Dept.

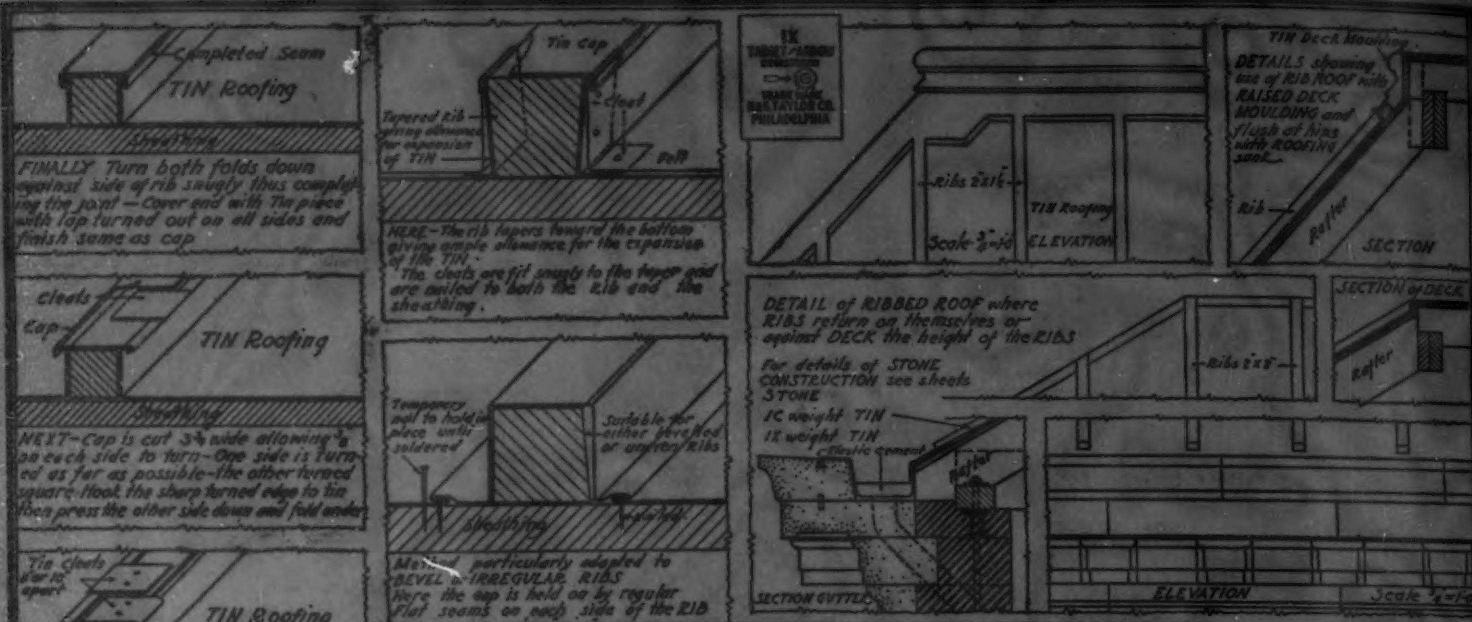
F. W. Devoe & C. T. Raynolds Co.
Founded 1754
Paints, Varnishes, Stains, Enamels
NEW YORK CITY

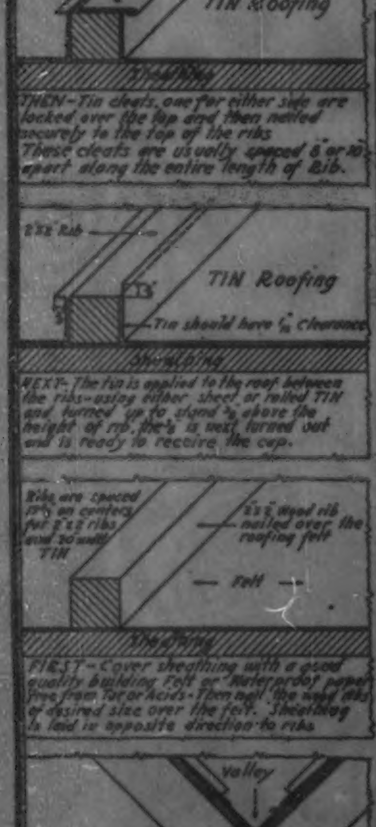
THE extensive range of greenhouses, embracing palm house and a series of flower and fruit houses, on the estate of Larz Anderson, Brookline, Mass., was erected by us. Fox & Gale, Architects

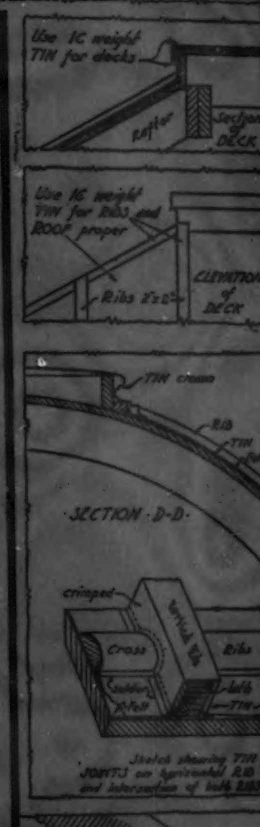
Lord & Burnham Co.

Sales Offices

New York, 42d St. Bldg., Boston, Tremont Bldg., Philadelphia, Franklin Bank Bldg., Chicago, Rookery Bldg., Rochester, Granite Bldg., Cleveland, Swetland Bldg., Toronto, Royal Bank Bldg., Montreal, Transportation Bldg. *Factories:* Irvington, N. Y., Des Plaines, Ill., St. Catharines, Canada







Target and Arrow Roofing Tin

WE have arranged with the Architectural Service Corporation, 140 N. 6th Street, Philadelphia, to publish and distribute to architects early in 1916 working drawings showing various methods of applying tin roofing to secure certain heavy ribbed effects on the roof. This advertisement will give an idea of the appearance of the drawings. They will be issued in a portfolio, together with other sheets illustrating various building specialties. We have a number of advance copies of these "Service Sheets," as the publishers term them. Should you have any work upon which you wish to consider roofing of this type, we shall be glad to send these drawings in advance of the portfolio if you will so advise us. They may serve to show you artistic roof effects new to you.

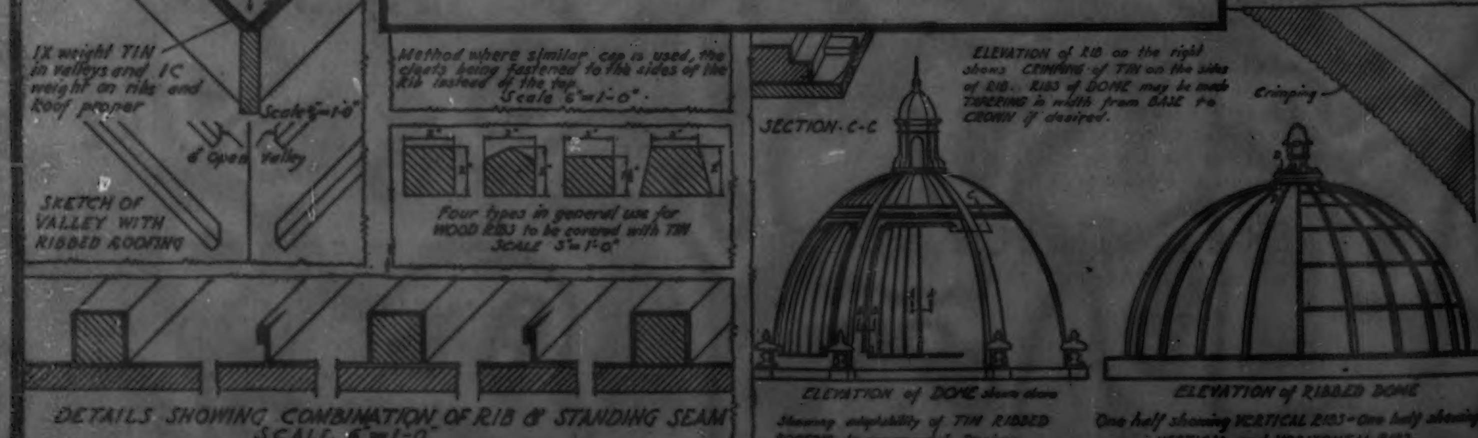
There is nothing new, however, about the product itself — TARGET AND ARROW roofing tin — which we recommend for work of this kind. This durable roofing tin is a specialty of ours handed down from the early days of our business. In this brand we have preserved an old time standard of manufacture for the use and benefit of present-day architects. Few building materials have had *so thorough a test of time* as TARGET AND ARROW roofing tin. It remains to-day the same durable quality that we have supplied to American sheet metal roofers for more than seventy years. It costs a little more than other roofing tin, so you are not likely to get Taylor quality if you write a specification that permits substitution. We sell this roofing tin to the trade at a fixed, published, re-sale price.

Specify Taylor's TARGET AND ARROW roofing tin, either IC or IX thickness, as the work may require. The tin roofing work should be done in accordance with the standard working specifications adopted by the National Association of Sheet Metal Contractors. These, together with several tables of covering capacity and other useful technical information, are published on the reverse side of the "Service Sheets" described above. We also furnish upon request these specifications in convenient form for architects' use, also a useful little reminder of our TARGET AND ARROW roofing tin in the form of a 6-inch white edge boxwood scale. Our catalogue is in "Sweet's" — all issues.

N. & G. TAYLOR COMPANY of Philadelphia

HEADQUARTERS FOR GOOD ROOFING TIN SINCE 1810

One Hundred and Seventh Year



PUBLISHED · BY · ARCHITECTURAL · SERVICE · CORPORATION, · PHILADELPHIA · U · S · A ·

THE BARTA PRESS, BOSTON